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OF

HE JESUP NORTH PACIFIC EXPEDITION

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The Jesup North Pacific Expedition

MEMOIR OF THE AMERICAN MUSEUM

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VOLUME II

PART VI

Archæology of the Gulf of Georgia and Puget Sound

BY

HARLAN I. SMITH

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VI. – Archæology of the Gulf of Georgia and Puget Sound.

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INTRODUCTORY.

In November, 1897, I conducted explorations from Cadboro Bay to Esquimalt, in the vicinity of Victoria, giving attention not only to cairns, but also to the near-by shell-heaps and to an earth-work near Victoria. This work was continued in May, 1898, by a reconnaissance of the shell-heaps and cairns of Point Roberts, and from July to September of those from Cape Lazo and Comox to Victoria. At this time the earth-work near Comox was visited. During the same season Mr. William H. Thacker co-operated with us by making a reconnaissance of the San Juan group. In 1899 we examined the shell-

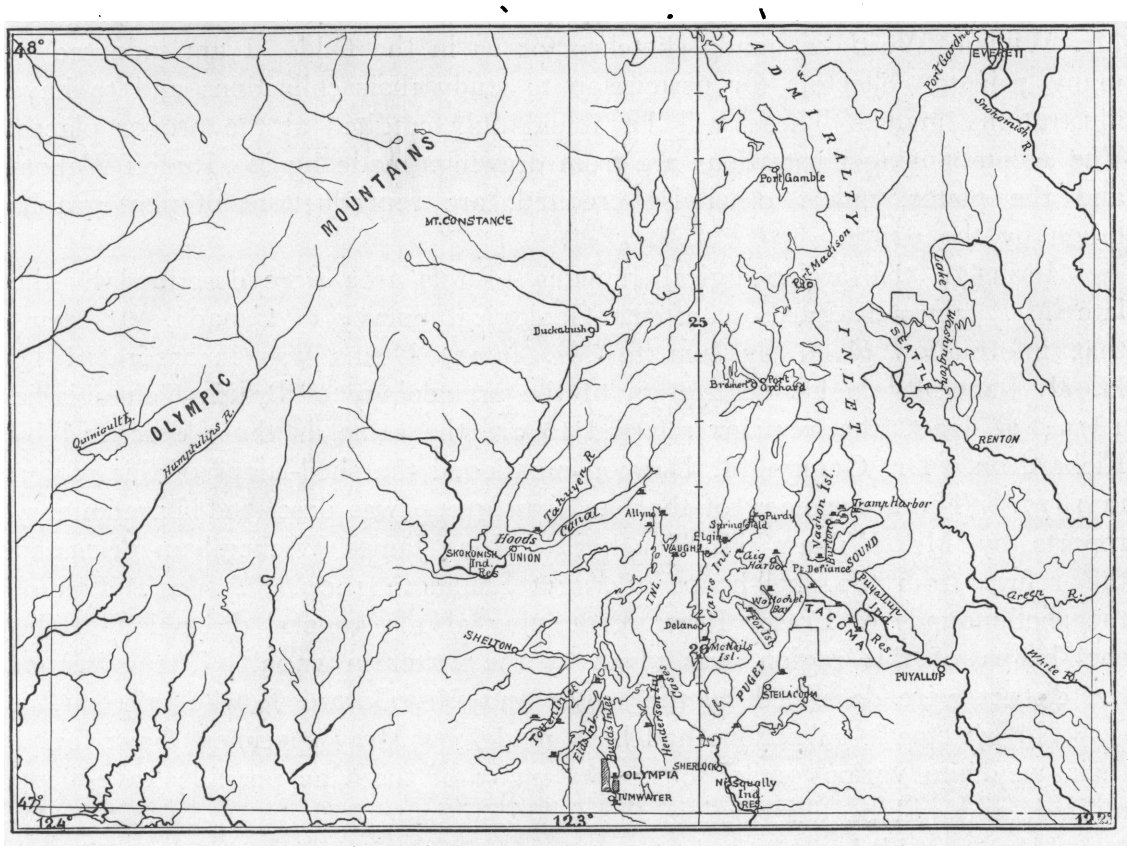

Fig. 101. Map of Upper Puget Sound, showing Location of Shell-Heaps.

heaps on Puget Sound, the Straits of Juan de Fuca as far west as New Dungeness (see map opp. p. 56 and Fig. 101), and again visited the Saanich Peninsula. In the cairn area, attention was divided between the shell-heaps and the cairns, while an earth-work near Port Williams and one at Marietta were

visited. Our examination of the earth-works, however, was casual. The following descriptions are based on these explorations.

In the field, assistance was rendered by Dr. Roland B. Dixon between Point Roberts and Burrard Inlet, and by Mr. Oregon C. Hastings along the eastern side of Vancouver Island, particularly in the vicinity of Victoria. The expedition is especially indebted to Mr. W. R. Robb for permission to explore on his land at Comox, to Mr. Alexander McDonald for a similar privilege at North Saanich, and to Mr. William H. Thacker for contributing to our knowledge of the San Juan group. I am indebted to the late Dr. G. M. Dawson, director of the Geological Survey of Canada, for permission to use the note-book of the late Mr. James Richardson. My thanks are also due to Dr. Charles F. Newcombe for assistance in securing information and illustrations of material from the general vicinity of Victoria, and to Hon. James Wickersham and Mr. William H. Gilstrap for information regarding the vicinity of Upper Puget Sound. Miss E. H. Woods of Victoria, and Mr. William Westlake, made sketches for us in the field. I am indebted to many private collectors for permission to study their collections and to have illustrations made. These will be found duly credited at the proper places. The accompanying illustrations are from drawings made by Mr. Rudolf Weber; and the plates, unless otherwise credited, are reproductions of photographs taken by the writer.

In 1872 the archæological remains of this area were described by the late Mr. James Richardson of the Geological Survey of Canada. It seems that information given by him to Mr. James Deans was incorporated by H. H. Bancroft[1] in his description of the archæology of British Columbia in 1875; at least, the remains referred to are the same as those described by Richardson. Dr. George M. Dawson mentioned the shell-heaps of this region in 1877.[2] The archæology of the San Juan group was described in preliminary reports by Mr. William H. Thacker.[3] Hon. James Wickersham discussed the refuse from the shell-heaps of Puget Sound in 1900.[4] A description of the shell-mounds of Fraser River, containing also a general discussion of the shell-heaps of this region, was given by the writer in 1903.[5] The cairns of the district were described by the writer and Mr. Gerard Fowke in 1901.[6]

No systematic collections had been made, but stray specimens have found their way into various collections. As many of these as possible have been utilized, and will be described in the following pages.

I have published preliminary reports of my investigations as follows: "Archæological Investigations on the North Pacific Coast of America" (*Science*,

[1] Native Races of the Pacific States, Vol. IV, pp. 736, 739-740.
[2] Canadian Naturalist, April, 1877.
[3] American Archæologist, 1898, pp. 49, 97, 187, 206.
[4] American Antiquarian, Vol. XXII, pp. 141-149.
[5] See pp. 133-191 of this volume.
[6] See pp. 55-75 of this volume.

N. S., Vol. IX, 1899, pp. 535-539); "Archæological Investigations on the North Pacific Coast in 1899" (*American Anthropologist*, N. S., Vol. II, 1900, pp. 563-567).

Comox and Vicinity.

Cape Lazo,[1] Comox, and vicinity were explored for some time, operations, however, being chiefly confined to the shell-heaps near Comox. At the base of the bluff at Cape Holmes, immediately south of Cape Lazo, upon which are the most northerly cairns known,[2] is a small shell-heap. At its southwestern extremity a little creek empties into the sea. Almost the entire length of the northern shore of the bay at Comox, from the bluff overlooking the Straits of Georgia, westward past Courtney, a distance of at least four miles, is bordered with shell-heaps. These shell-mounds were mentioned by Bancroft.[3]

On top of the high bluff overlooking the Straits of Georgia, about a mile east of Comox, is a small shell-heap. From this point a low sand-spit makes out to the southwest. It is used by the Government for target-practice. It is said that near the point was an ancient historic burial-ground.

There is a shell-heap which extends from the middle of the base of this spit westerly across the farm of Mr. Ronald S. McConnell: it is on low land, and runs parallel with the beach. It averages perhaps 30 cm. in height, and is interrupted here and there.

In the forest belonging to Messrs. King and Casey, at a point immediately east of the mouth of the small creek emptying into the bay, about half a mile east of Comox, this shell-heap reaches a height of fully 1.2 metres, and there are several ridges of shells and refuse lying in the forest back of and parallel to it. Here were the remains of the bankings made around immense rectangular houses which had been placed with their longest sides parallel with the beach. A considerable number of artifacts and some skeletons were found here.[4]

Continuing westward across the creek, the shell-heap extends parallel with the beach in the edge of the forest, and crosses a field to the west belonging to the farm of Messrs. King and Casey. Back of the main heap, and parallel with it on the western part of this field, is a similar heap. These two shell-ridges extend westward on the land of Mr. Robb, where they terminate at the bank of a small creek. We made three large excavations in the shell-heap between this stream and the one previously mentioned to the east, besides cutting a large trench in the parallel shell-heap to the rear. From the mouth of the second stream, the main shell-heap extends westward, being interrupted in one place only before reaching the village of Comox.

[1] See map opposite p. 56. [2] See p. 57.
[3] Native Races of the Pacific States, Vol. IV, pp. 739-740. [4] See Figs. 102-111.

An irregular space a short distance to the rear of this heap, on the eastern portion of Mr. Robb's land, is covered by shell-heaps. Near here were trees which, it was said, formerly contained recent tree-burials.

West of Comox the shell-heap continues along the beach, practically unbroken, on the low land across Mr. Robb's farm. In this portion of the heap we cut a large trench close to the western line of the farm. Continuing still westward, the shell-heap follows the beach, and nearly half a mile west of the wharf crosses land somewhat higher than that east of Comox, on the farm of Mr. Morris McCardle. Here we cut two large trenches and secured a number of specimens.

About half a mile west of Comox the land rises brokenly, and the beach is bordered by a high bluff. In this vicinity there are many breaks in the shell-heap, until the low land to the west of the bluff is reached. On top of this bluff is an earth-work of semicircular form. The place is about two hunderd metres to the southwest from the Catholic cemetery, which is about half a mile west of Comox. The work is composed of a moat, which begins at the straight bluff line, and circles northward in the forest, enclosing a space about sixty-five metres in diameter. A short distance back from the bluff line, at the eastern end of the earth-work, the moat divides, and continues as two slightly excentric ditches, which again unite at the northwest a considerable distance back from the cliff. Each side of these excavations are embankments, no doubt made up of the soil taken from them. Near where the ditch divides, there is only one embankment between the two; but where they are far enough apart, a level space intervenes between the embankments. Within this enclosure are traces of two house sites with the sides parallel to the shore, which apparently were inhabited to within comparatively recent times.

A short distance to the west is the line of the Indian reserve, beyond which the high land recedes from the beach, leaving a flat or bottom, evidently a continuation of the Comox River Valley. Following along this beach, the shell-heap may be seen from time to time lying parallel with it. There are patches of shell-heap back of the main ridge and on the hillside; while farther back and to the north of the lower road, cairns are said to have been found. In the main shell-ridge here are numerous rectangular depressions with the long sides parallel to the beach. These mark house sites, some of which were probably occupied until recent times.

We now reach the present Comox Indian cemetery, and finally their village, about a mile west of the town of the same name. Immediately west of the Indian village the shell-heap continues close to the beach, being cut here and there by the road. It passes the old Hudson Bay Company's house, in front of which we made a large excavation, and continues on to the farm of Mr. Hugh Grant as far as the dike, near which we cut two more trenches. From this point to Courtney the land was subject to overflow, and no shell-

heaps were noted. From Courtney, following northward along the eastern bank of the Comox River, is a shell-heap of considerable height, which has been cut into during freshets, exposing a vertical section. Back of this shell-heap, on the slope south of the Mission Church and northern road, we located mounds or cairns;[1] and between it and these, scattered isolated deposits of shell-heap material.

Along the northern side of the southern branch of the Comox River, close to its junction with the northern branch, is a small shell-heap, back of which are the Indian "potato-patches," and still farther back on the ridge small cairns[1] were found. Some specimens were found on the spit which makes out northwestward from the western side of the bay.

On Denman Island, along the northeastern side of the base of the spit, making west from its northern end, and also on the southern side of the spit itself, extending west from its base, were low shell-heaps parallel with the beaches. At the western end of the shell-heap, along the northern side of the spit, a cairn[1] was found. On the first of the series of islands, extending north from the northern end of the island, was a small shell-heap. These heaps are only about five miles southeast of Comox.

Bones of animals, including the whale, elk, deer, bear, beaver, and fish, were found frequently in the layers. Some of the large bones had been split, probably for extracting the marrow. Bones of five or more domestic dogs ($\frac{16}{6436}$, *a*, *b*; $\frac{16}{6476}$, *a*, *b*; $\frac{16}{6689}$, *a-d*) were found. Pieces of partly burned human skull-bones and bones of infants; pieces of bones of other animals and antlers, some of each burned; beaver-teeth; bird-beaks and fish-spines, —were also found.

The shells forming the bulk of the shell material in the shell-heaps of the vicinity of Comox are those of *Ostrea lurida* Carpenter, *Tresus nuttalli* Conrad, *Saxidomus nuttalli* Conrad, and *Tapes staminea* Conrad, *Macoma nasuta* Conrad, *Mytilus edulis* Linnæus, *Cardium nuttalli* Conrad. Less numerous are *Lunatia lewisii* Gould, *Acmæa mitra* Esch, *Placuanomia macroschisma* Desh., *Purpura crispata* Chemnitz, *Haliotis kamtschatkana* Jonas, *Pecten caurinus* Gould, *Drillia* sp. A land-snail was also found which may have taken up its home in the shell-heap recently. Fragments of the spines and plates of the sea-urchin were also found. One shell of *Tresus nuttalli* Conrad and two shells of *Saxidomus nuttalli* Conrad are broken at the top of the dome, apparently from the inside. Shell beads or dentalium shells were not found, but this is probably due to accident.

The vegetable substances found include only fragments ($\frac{16}{6709}$) of cypress wood (*Cupressus* sp.) preserved from decay by external charring, and some charcoal ($\frac{16}{6547}$), which latter was found 30 cm. deep with Skeleton No. 1 ($\frac{99}{2289}$).

The objects found in the shell-heaps were made of stone, shell, bone, antler, and ivory. A piece of quartz crystal ($\frac{16}{6594}$) was found, but no objects

[1] See p. 57.

made of that material were seen. A lump ($\frac{16}{6529}$) of burned or infusorial earth was found on the surface of the wind-blown sand on top of the bluff east of Comox, at the base of the spit. It was possibly used for paint. A cone-shaped copper bangle ($\frac{16}{6543}$) found on the surface at the same place is evidently of recent origin.

Both chipped and ground stone points for arrows, spears, etc., were secured. Of chipped points, only two entire and one fragment were found. One of these (Fig. 102, *a*) is a leaf-shaped point chipped from a hard refractory black volcanic rock, apparently melanophyre, which has not chipped smoothly. A similar specimen, somewhat smoother, with tip and edges near it worn smooth, and made of a greenish-gray andesite, was found near by. The broken tip from a similar point ($\frac{16}{6548}$) was found on the surface of the shell-heap on Mr. McConnell's farm. So far as I am aware, these mark the most northern point at which chipped implements have been found on the coast of British Columbia, although they re-appear in northern Alaska.

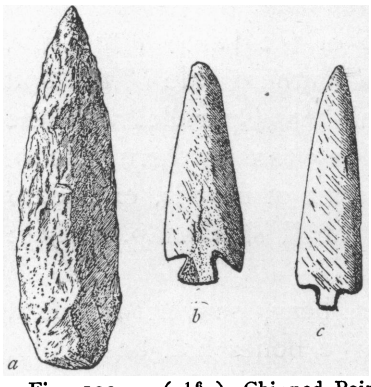

Fig. 102, *a* ($\frac{16}{6593}$), Chipped Point made of Melanophyre, from Shell-Heap ½ mile East of Comox; *b* ($\frac{16}{6523}$), Point ground out of Slate, found on the Surface at Government Spit, Comox; *c* ($\frac{16}{6588}$), Point ground out of Slate, from Shell-Heap on Hugh Grant's Farm, Comox. Length, 97 mm., 59 mm., 65 mm.

Six points rubbed out of flat pieces of slate were found. Fig. 102, *b*, illustrates one of them, a thin point ground out of slate for an arrow or spear. The notches at the base terminate on each side in a groove extending up on the sides of the point. Under a strong magnifying-glass, the notches seem too irregular for the work of a file. The sides of another slate point (Fig. 102, *c*) are flat in the middle, bevelling off to the sharp edges and point. The notches which separate the tang from the barbs extend slightly up on the surface in the form of grooves on each side. The third specimen ($\frac{16}{6527}$) found on the surface of the bluff east of Comox, is made of a flat triangular piece of gray slate with fractured sides, only the two long side-edges showing work. These are bevelled from each side to form sharp cutting-edges.

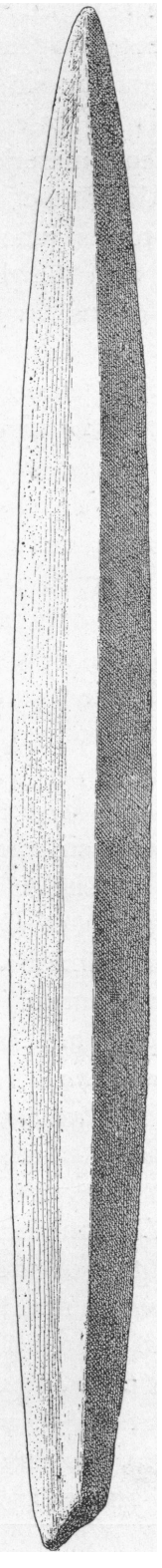

Fig. 103. Point ground out of Slate. From Comox. (Provincial Museum, Victoria, Cat. No. 775 [307]; from a drawing by Miss E. H. Woods.) ½ nat. size.

The object may have been a finished point for an arrow, spear, or knife, or it may be unfinished. The fourth ($\frac{16}{6470}$), found in the shell-heap half a mile west of Comox, is roughly rubbed on the sides and also across the edge of the base. The fifth ($\frac{16}{6624}$), a fragment of a point having both ends broken off, is flat on each side and hexagonal in cross-section. The sixth ($\frac{16}{6610}$), a large specimen, is broken off at both ends, has a long tapering point with sharp edges, and is hexagonal in cross-section. The base tapers from the broadest part of the point, has rounded edges, and is somewhat of the shape of a wedge with the edge broken squarely across. It resembles in outline a point from the shell-heaps at Port Hammond, shown in Fig. 11, *c*, p. 143, of this volume.

Besides these, three thin pieces of slate were found. They were possibly parts of fish-knives or parts of rubbed points. Fig. 103 illustrates a large point ground out of a thick piece of black slate, which in section is hexagonal, but somewhat flattened.

Bone objects, probably used for arrows, spears, barbs, and fish-rake teeth, rubbed out of bone and antler, were found in great numbers and of many varieties. They are much more numerous than points made of stone, and are much more abundant here than in the Thompson River region. Of two of these ($\frac{16}{6449}$) which are pointed at both ends, the first is curved and more slender at one end than at the other; while the second is curved on one side, nearly straight on the other, and the two ends are almost alike. These may have been teeth for fish-rakes. Another specimen ($\frac{16}{6454}$), apparently a fish-spine, found in the shell-heap on Mr. McCardle's farm, may have been used as an awl or a fish-rake tooth.

Twelve points[1] for arrows or spears, rubbed out of bone, with sharp tips, rounded shanks, and wedge-shaped bases, varying in length from 40 mm. to 80 mm., were found. In some the point is longer than the base, and in others the opposite is true. Sometimes the whole point tapers towards the tip, in other cases it is widest at the point where the base is set off from the tip.[2] The wedge-shaped base served to haft the point in a split shaft-end or for inserting between two barbs with flat faces.[3]

Fifty other points of this general shape rubbed out of bone, but with less wedge-shaped bases or with lower ends conical or irregular in form, were found. Most of these points had sharp bases, but some were blunt. Their general type is circular in section. Tip and base vary considerably in proportions. They range in length from 42 mm. to 104 mm. These points may have been used as arrow-points, spear-points, barbs of hooks, teeth of herring-rakes, or even as nose-ornaments and as teeth to be inserted in wood-carvings.

Barbs made of antler, for such harpoon-heads as are at present used

[1] Compare Vol. I, Fig. 336, *b*; and Fig. 13, *h*, *j*, of this volume.

[2] Compare Fig. 13, *h*, *j*, p. 145, of this volume.

[3] See p. 310 and Fig. 160.

by the natives for taking salmon,[1] were found. Ten of them resemble the one shown in Fig. 15 of this volume, with a flat or slightly grooved surface on the fore-part, so that when two were put together, a flat point of bone or slate, probably more often the latter, could be held between them. These vary in length from 36 mm. to 78 mm. Two others have a groove in the fore-part, instead of a flat or slightly hollowed surface, apparently so that, when two were put together, a somewhat pencil-shaped bone point could be held in the cylindrical socket formed by the two grooves. One of them is broken, the other is 54 mm. long. They are all more or less triangular in section; or the back, which is of the outer part of the antler, is rounded. All those used with flat blades are pointed, or nearly so, except two which are broken off. The tops of those for nail-shaped blades are cut square across. The edges of all are more or less sharp. The lower ends are usually pointed, but the longest one of the flat-blade class is cut square across.

Points ground out of bone, with barbs on one side only, most of which were probably used as arrow or spear heads, were not numerous; but, as the two whole and five broken specimens found were all of different types, this paucity of material is considered to be accidental. One of these points is shown in Fig. 104. It shows evidence of having been rubbed down with gritstone. Each barb, which represents part of the original edge of the bone point, is divided into lesser barbs. Five are small, and the bases are wedge-shaped. The remaining two are larger, and the base of one is broken off; but the other is somewhat wedge-shaped, though cut square across the end. The bases of the six having complete butts are also somewhat bevelled from the side-edges.

Fig. 104 ($\frac{1}{1}\frac{1}{1}$). Harpoon-Point made of Bone. Found in shell-heap on Mr. Hugh Grant's farm, Comox. Length, 108 mm.

The smaller points might well have served as arrow-heads, as prongs for bird-spears,[2] or even as spears for fish or larger animals; while the large points were probably for harpooning large sea-animals, such as seals. They were more abundant than the chipped stone points, but not so numerous as the ground points, either those of slate or those of bone.

None of the barbed points made of bone resemble the bone harpoon-points found in the Thompson River region. In one of these specimens the barbs are cut straight across the edge ($\frac{16}{6536}$). One specimen ($\frac{16}{6537}$) with wedge-shaped base tapered from each side-edge, with edges rounded on the front and rectangular at the back, and with rounded back and sides, is broken off near the tip. Eight barbs are present, however, in a small ridge set out from the shaft by longitudinal grooving on each side.[3] They are made by

[1] See Vol. I, p. 251; also James G. Swan, Indians of Cape Flattery, Fig. 4, p. 20.

[2] See James G. Swan, Indians of Cape Flattery, Fig. 34, p. 48.

[3] Compare Fig. 16, *c*, of this volume.

notching across this ridge practically to its base, and square across its edge, at nearly equal intervals. The notches are undercut somewhat. Below the lowest notch the ridge is cut away or runs out. The piece ($\frac{16}{6633}$) which lacks both base and tip is rather large, and is somewhat rectangular in section, with slightly convex sides and edges.

Fig. 105 shows a sinker made of a natural oval pebble, over each end of which, extending from side to side, is a shallow pecked groove. The object appears to have been exposed to the fire on one side. A roughly oval pebble, slightly asymmetrical in every aspect, encircled lengthwise over its widest surface by a shallow pecked groove ($\frac{16}{6601}$), was found on the beach west of the Comox wharf. It was possibly used as a sinker for a net or line.

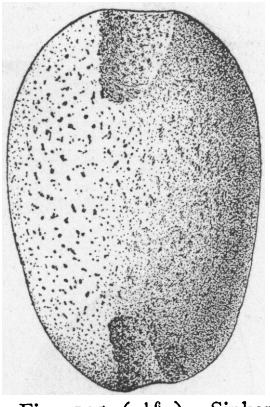

Fig. 105 ($\frac{16}{6657}$). Sinker made of Stone. From the shell-heap on Mr. Hugh Grant's farm, Comox. Length, 103 mm.

There is another sort of sinker. Four of these ($\frac{16}{6562}$) were found near together in the shell-heap about half a mile east of Comox wharf. They are simply more or less flat oval pebbles 90-105 mm. long, each perforated. In three the perforations are at one end, while in the fourth there is a hole through the middle. These perforations are made in the usual way, by counter-sinking from each side of the object. Those in two of the specimens having the holes near the end appear to have been pecked: one of these sinkers is of hard stone. The perforations in the other two, which are of soft sandstone, were drilled, as is shown, by deep concentric striations. One of these two specimens, which is perforated at one end, has also a pit on each face, near the other end. Apparently a perforation was started and abandoned here. The fact that these specimens were found near together, as would be the case if attached to a net, suggests that they were used as sinkers for nets or lines.[1] A few chipped and rubbed pebbles ($\frac{16}{6431}$, $\frac{16}{6596}$) may have served the same purposes.

An end ($\frac{16}{6558}$) broken from a weathered piece of an outcrop, about twice as long as it is wide, with a square section, has a shallow groove roughly pecked around the broken or larger end. It was found in the shell-heap about half a mile east of Comox. This may have been an anchor, but it is possible that it is a pestle in process of manufacture.

Pebbles, some of them crackled and broken as though they had been heated and then dropped into water, and many of them still covered by soot, were found on and in the shell-heaps. These were probably used for boiling, being dropped into boxes or baskets containing food to be boiled.

Stone pestles or hammers, that serve as wood-workers' tools and are also used for crushing dried meat, berries, etc., were found. One ($\frac{16}{6518}$) has

[1] Compare Fig. 22, *a*, *b*, p. 155, of this volume.

a hat-shaped top,[1] while the others have flat tops, like those of northern Vancouver Island (see Fig. 126, *a*).

A long oval pebble, slightly wider than thick ($\frac{16}{6683}$), found in the shell-heap at the "potato-patches" on the north bank of the south branch of Comox River, is battered on one end, as if from use as a pestle. A cone-shaped natural pebble, pecked along the middle half of one edge ($\frac{16}{6525}$), was found on top of the wind-blown bluff at the base of Government Spit. The pecking was possibly done to bring it to the form of a pestle. Other than this, it shows no signs of shaping.

An asymmetrical oval pebble ($\frac{16}{6602}$), with a pecked pit in the middle of each side, battered on one end and slightly on one side-edge, was found on the beach west of Comox wharf. It resembles the hammer-stone of the Mississippi Valley. In Fig. 106 is illustrated an oval natural pebble of black argillite. Both ends are slightly battered, and in one side-edge is a notch caused by bruising. The opposite edge has been broken off. In the middle of the flatter side is a pecked pit; while the opposite side is somewhat battered, but not enough to form a pit. Another hammer-stone ($\frac{16}{6608}$) was found in the shell-heap about a quarter of a mile east of Comox wharf. It is a large natural pebble of tough, close-grained heavy stone, battered flat and somewhat chipped on the ends, battered on the side-edges, and having a pit in the centre of one side, with a slight indication of one in the other. It has apparently been in the fire.

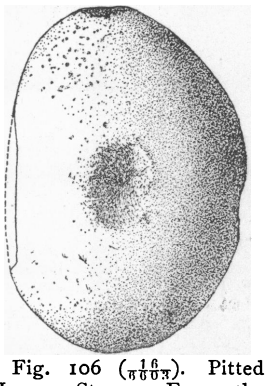

Fig. 106 ($\frac{16}{6607}$). Pitted Hammer-Stone. From the beach west of Comox. Length, 90 mm.

These objects may have been used as anvils or as hand-hammers, the pits being the parts with which the blow was delivered, or the pits may have been made to facilitate holding with the fingers. Such pitted hammer-stones, as previously mentioned,[2] are not found in the interior of British Columbia and Washington, and are exceedingly rare on the coast of the region here under discussion.

Whetstones to the number of forty-seven, made of flat oval pebbles and thin flat fragments, some water-worn, of coarse and fine sandstone, were found in or near the shell-heaps near Comox. Some of the pieces were broken. One whetstone ($\frac{16}{6559}$) found in the shell-heap about half a mile east of Comox wharf was made of a large fragment from a ledge of coarse sandstone, and was rubbed on one side only. Another ($\frac{16}{6432}$) found in the shell-heap on Mr. McCardle's farm, was made of an oblong rectangular fragment of fine sandstone, apparently beach-worn, and rubbed by use in the middle of one side.

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[1] Compare Vol. I, Fig. 24, and the top of Fig. 27, p. 138.

[2] See Vol. I, pp. 141, 415, and 437; and p. 162 of this volume.

Fragments of a thin piece of fine-grained sandstone ($\frac{16}{6522}$) found on the surface of the Government Spit had some of the edges smoothed, and both sides had been used. These are apparently of a thin whetstone. An irregular piece of sandstone ($\frac{16}{6486}$), also apparently beach-worn, has one side smoothed, as from use as a whetstone; and obliquely across this surface longitudinally is a small groove or large incision, apparently made by sharpening some object. It was found in the shell-heap on Mr. McCardle's farm. Here was also found, about half a mile west of Comox wharf, a flat surf-worn piece of coarse sandstone ($\frac{16}{6426}$). One side has been somewhat worn by longitudinal strokes, as if the object had been used as a grindstone. There are a number of nodular spots in the stone, at each of which it has apparently weathered away, leaving a pit. The largest one of these shows signs of use as a small mortar.

There are two cup-shaped mortars, about 10 cm. in diameter and 45 cm. apart, in the top of a large flat rock lying in the salt marsh below the high-tide line, a little to the south of the shell-heap which is located about half a mile east of Comox.

Stone celts mounted as adzes were used until recently by the Indians of this region for finishing boards split with wedges. They were also used for finishing canoes; and the regularity of the scars left by each adze-stroke marked the skill of the workman. A Kwakiutl Indian was photographed while sharpening a stone adze at Fort Rupert, on Vancouver Island, as late as 1898. Recently the stone celts used as adzes have been replaced by iron files sharpened for the purpose, and by axe-blades cut in two on a plane at right angles to the cutting-edge.

Only one stone celt was found in this vicinity, although the celt was probably a tool in common use among the prehistoric people, and their absence among our finds is simply accidental. The specimen found is a water-worn fragment of a celt, made of stone ($\frac{16}{6556}$). It was found on the surface in the creek cutting into the shell-heap about half a mile east of Comox wharf. The upper end of this specimen was broken off and missing. The edge was sharpened more from one side than the other, and much chipped. One side is nearly flat, while the other is quite convex, forming several longitudinal facets. The material is apparently argillite.

In the shell-heap about half a mile east of Comox I also found a chip from a hard, close-grained greenish pebble ($\frac{16}{6595}$). It is chipped on one side and on the edges. The general form with wedge-like ends, one broader than the other, is that of a celt, and it may be one in process of manufacture. It may be noted that the celt found at Comox, like those found in the shell-heaps of the Lower Fraser River, is shorter than those found in the Thompson River region,[1] and of poorer and more opaque material, as are many of those of the Lower Fraser River.

[1] Compare p. 164 of this volume; and Vol. I, pp. 142, 416, 417.

No specimens were found which illustrate the manner of roughing out celt blades by grooving. One object, however, a thin flat piece of sandstone ($\frac{16}{6561}$), used on both sides as a whetstone, had also been rubbed on the edge, and showed deep striations on each side of the rounded edge, probably made in cutting it out. Possibly, however, these striations and the rounded edge were made in cutting a groove with it.[1] It was found in the shell-heap about half a mile east of Comox wharf. Another ($\frac{16}{6655}$), considered to be a whetstone, somewhat resembles such grinders.

A piece of fine sandstone ($\frac{16}{6487}$) found in the shell-heap on Mr. McCardle's farm is nearly square, and rubbed on both sides. One edge is rubbed flat; the other is rounded, and to it the sides bevel slightly, so that it resembles in form the grinders used for cutting serpentine and nephrite into celts; but this edge is not striated by longitudinal grinding, as would probably be the case if so used, and the object was probably a whetstone. The ends have been broken off, after being marked by incisions on both sides, although these were so shallow that the break did not follow both incisions on either side.

A celt-haft made of antler (Fig. 107) was found here of the same kind as those found by us in the Lillooet Valley, in the shell-heaps of the Lower Fraser, at Saanich, and at Utsalady,[2] Wash. It is made of a large piece of antler. The surface is but slightly changed from the natural form of the material. The ends are bevelled, with the edges rather sharp. In each end is a hole, the upper one being ovoid in section, and the lower one somewhat rectangular, with irregular corners and sides, which taper slightly towards its bottom, the upper one being 22 mm. deep, the lower 28 mm. The haft being 57 mm. long, 7 mm. of material are left between the bottoms of these holes. The antler cells around the edges of the holes, especially the lower one, are somewhat compressed, and the object is split up one side, as if due to a celt having been driven into the end of the antler.[3] Marks of hacking show on the bevelled edges, suggesting, but not proving, that the object was made since the advent of iron tools into the region. A few other broken or incomplete hafts were found ($\frac{16}{6635}$, $\frac{16}{6645}$, $\frac{16}{6492}$, $\frac{16}{6659}$, $\frac{16}{6613}$, $\frac{16}{6491}$).

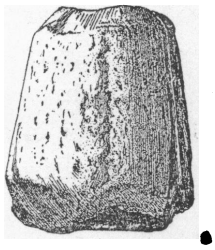

Fig. 107 ($\frac{16}{6617}$). Celt-Haft made of Antler. From shell-heap ¼ mile east of Comox. ½ nat. size.

It is said that celts were formerly hafted in handles of antler in the Thompson River region.[4] There knives are sometimes hafted in this manner by the present natives. They boil the antler to soften it, before driving in the knife-tang. The antler afterwards hardens, and holds the knife firmly. The same method may have been employed for hafting celts.

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[1] Compare p. 167 of this volume; and Vol. I, Fig. 47, p. 143.

[2] See Figs. 129, 130, and 157. Compare also American Anthropologist, N. S., Vol. II, 1900, p. 566; also Fig. 29 (p. 164), Fig. 59 (p. 187), and p. 165, of this volume.

[3] See Vol. I, p. 415, and remarks on p. 166 of this volume.

[4] Compare p. 166 of this volume.

A fragment only of a typical wedge ($\frac{16}{6614}$) made of antler was seen in the vicinity of Comox. It was found in the shell-heap about a quarter of a mile east of Comox wharf. A prong of antler ($\frac{16}{6570}$), however, slightly flattened at the point, and cut square across its base, was found in the shell-heap about half a mile east of Comox wharf. It may have been used for a wedge. The base is decayed and at present hollow, which suggests that possibly it was used as a knife-handle.

A small curved prong ($\frac{16}{6574}$), made into a wedge by sharpening more from the concave side, which tended to offset the curve, was found in the shell-heap half a mile east of Comox wharf. Here also was found a fragment of a hollow bone, broken across at the base, and sharpened like a wedge at the tip ($\frac{16}{6573}$). The base is not battered or fractured, as would be the case had it been used as a wedge, but it may have been set in a handle or used as a chisel. Another piece of the wall of a rather large hollow bone ($\frac{16}{6576}$), found in the same shell-heap, is rubbed flat and sharpened like a wedge or chisel.

The apparent absence of a large number of wedges in the vicinity of Comox may be accounted for on the supposition that most of them were made of wood, like the more common form of the modern wedge used there by the present natives.

Bone chisels made of long bones were also found. There are four of these specimens, each made from a longitudinal fragment of a long bone. The edges are in a plane parallel with the natural surface of the bone. One ($\frac{16}{6578}$) is sharpened by bevelling from the marrow-canal; another ($\frac{16}{6572}$) is made from a tarsus bone with the articulation remaining, similarly sharpened, but also slightly bevelled from the other side; în a third ($\frac{16}{6703}$), the bevelling is more from the outer surface; while the fourth ($\frac{16}{6637}$) is sharpened from both sides, and the side-edges of the sharpened part are tapered. The point of this specimen is rather narrow. All but the one with the articulation remaining are broken irregularly at the top. This one, and that sharpened from the marrow-canal only, show one side-edge cut out by longitudinal grooving. Some of these may have been dagger-blades. No specimen was found with the chisel-blade at right angles to the plane of the widest surface of the bone.

Fish-knives made of slate, judging from the number of pieces found in proportion to other objects secured, were evidently in common use. A fine one ($\frac{16}{6471}$) was found in the shell-heap on Mr. McCardle's farm. It is oblong in form, with one long curved edge, sharpened by rather short convex surfaces from both sides. The other long edge is chipped nearly straight and is somewhat ground, apparently so as to fit it into a handle. The ends are chipped from each side and nearly parallel, while on the sides are scratches. Near the back edge are particles of stained matter resembling iron-rust, which may be from iron rivets in a handle, and is the only suggestion we have

that any of the archæological objects found here may have been used since the advent of the white people into the region.

A fish-knife ($\frac{16}{6686}$) was found in the shell-heap at the "potato-patches" on the north bank of the south branch of Comox River, about four miles west of Comox wharf. It has a nearly straight edge and back. The cutting-edge is sharpened in such a way that there is no line between the flat sides of the knife and the edge, but only a gentle, convex curve. The back resembles the edge, but is not so sharp or so smooth. The ends are chipped, and nearly straight in outline.

Besides these two complete fish-knives, fourteen fragments of slate were found in and about the shell-heaps of Comox. Six of them show that they were made, or partly made, into fish-knives; and three of them may be such, or may be parts of points rubbed or partly rubbed out of slate. It seems peculiar that out of sixteen specimens, only two should be found entire; but a similar condition was found in the shell-heaps of the Lower Fraser River.[1]

These entire and typical specimens are similar in general form to those now used in this region. Most of these latter, however, are made of iron instead of slate, and many have bone or wooden handles. There are traces of a handle only on the first of the above-mentioned specimens.

Two fragments of longitudinal pieces cut from bones were found. These ($\frac{16}{6580}$, $\frac{16}{6640}$) may be pieces of skin-scrapers similar to those found in the shell-heaps of the Lower Fraser Valley,[2] and resembling in general style and shape the skin-scrapers made of bone that are found in the Thompson River region.[3] The relative scarcity of skin-scrapers in the area from Comox to Olympia, in proportion to their relative abundance in the Thompson River region, is what we might expect if the ancient people, like the present natives here, depended chiefly upon clothes and fabrics made of cedar-bark and other plant-products rather than upon skins, and had no moccasins; while those of the Thompson River region, probably like the modern Indians there, used the skins of animals not only for clothing, but also for moccasins. These two pieces were cut out by grooving longitudinally from the outside, and by breaking through to the marrow-canal, where the grooving was not sufficiently deep to reach it. One piece ($\frac{16}{6640}$) broken off at each end is charred. One end of it tapers somewhat, suggesting that it may be a part of an awl or a dagger. The other piece is broken off at one end, while at the other end there is a smoothed surface part of the way across, the rest being broken. It is rather narrow for a skin-scraper, and it too may be a part of some other implement.

Over thirty awls made of bone, or sharpened bone objects thought to be such, were found. Some of them may have been used in plaiting baskets.

[1] Compare p. 159 of this volume.

[2] Compare p. 169 and Fig. 34, p. 170, of this volume.

[3] See Vol. I, Figs. 65, 66, p. 147, and p. 420.

Six of these awls were each made of the proximal part of the ulna of a deer. Two of them ($\frac{16}{6495}$, $\frac{16}{6704}$) had wide, chisel-like points. These may have been used as chisels. One, a short dull one, possibly a tool for plaiting, made of the ulna of a young deer ($\frac{16}{6666}$), was found in the shell-heap on Mr. Hugh Grant's farm.[1] Another, somewhat sharper ($\frac{16}{6496}$) was found in the shell-heap on Mr. McCardle's farm. One ($\frac{16}{6705}$) had a sharp awl-like point. Another quite sharp, and having the articular surface cut off smooth ($\frac{16}{6574}$), was found in the shell-heap about half a mile east of Comox wharf. These are of the type of awl so widely distributed in America.[2] Ulnæ with the naturally thin lower ends ready to be sharpened into awls were found here.

Over twenty-seven, by far the greatest number, were mere splinters of hollow long bones of mammals, sharpened at the more acute end to a more or less rounded point. Some seventeen of these were smoothed on one or both edges. Two were made by sharpening a longitudinal piece of the wall of a long bone, cut out by grooving in the usual way, and resemble sharpened fragments of skinscrapers.

One awl-like object, made of a splinter of a hollow long bone of a mammal, was rubbed on the side-edges and on the flat side across the marrow-canal, and sharpened to a rounded tip ($\frac{16}{6632}$). It was found in the shell-heap on Mr. Hugh Grant's farm. Its base is slightly wedge-shaped and also narrowed from the side-edges, but broken square across the end, like a truncated pyramid. Perhaps it was used as a basket-plaiting tool, knife, or small dagger.

In Fig. 108 is shown an awl made of the primary wing-bone of a bird.[3] It is cut diagonally across to make the point, while the articular surface at the other end forms a convenient handle. The point and shaft are polished from use. Near the point may be seen a number of striations caused by sharpening it on a grindstone.

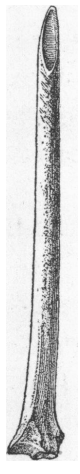

Fig. 108 ($\frac{16}{6487}$). Awl made of the Primary Wing-Bone of a Bird. From shell-heap on Mr. McCardle's farm, ½ mile west of Comox. Length, 122 mm.

Only a fragment ($\frac{16}{6691}$) of the point of what may have been a needle was found. It is oval in section, of the form somewhat peculiar to the type of needles common to both the shell-heaps of the Lower Fraser[4] and the Thompson River region.[5]

A fragment of a bark-breaker ($\frac{16}{6661}$) similar to those used by the present natives,[6] made from the cap of the vertebra of an immature whale, was found on Mr. Hugh Grant's farm. The articular face was left in nearly or

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[1] Compare Vol. I, Fig. 357, *a*, and p. 170 of this volume.

[2] See p. 170 of this volume; and Vol. I, p. 420.

[3] Compare Vol. I, Fig. 357, *c*; also Fig. 35, *d*, of this volume.

[4] Compare Fig. 36, *a-c*, p. 172, of this volume. [5] Compare Vol. I, Figs. 76-78 and 358, *c-e*.

[6] Compare Niblack, The Coast Indians of Southern Alaska and Northern British Columbia (Report of U. S. National Museum for 1888), Fig. 179, *l*, p. 312.

entirely its natural state. The rough surface of the cap has been smoothed by grinding off the higher projections. An oblong perforation, cut tapering from each side, was made through, about one-third of the way down from the top edge, setting off the intervening portion of the disk as a handle. The rough face near the lower edge is slightly bevelled, to correspond with the natural bevel of the articular face and as if to partly sharpen the object.

A few objects of doubtful significance may be mentioned here. A tubular bone ($\frac{16}{6581}$), cut off from what is apparently a bird-bone by incising all around, was found in the shell-heap half a mile east of Comox. It is 22 mm. long by 10 mm. in diameter. The ends are worn or polished off at a bevel all around from the outside, but not from the inside. It may have been a bead or an eyelet for a string,[1] such as the present native uses on his fish-nets, or a ferrule for fastening a tool smaller than a celt into a handle. A fragment of a very short cylinder or ring of antler ($\frac{16}{6642}$), possibly a celt-haft or ferrule, was found in the shell-heap on Mr. Hugh Grant's farm. A rib with both ends broken off ($\frac{16}{6453}$), the larger one worn smooth, was found in the shell-heap on Mr. McCardle's farm, and may have been used as a stirrer. It resembles the stirrer used by the present Indians of this region.

A beaver-tooth ($\frac{16}{6458}$) made into an object, probably a point for a carving-knife,[2] like similar carving-knife points in use among the Kwakiutl Indians, was found in the shell-heap on Mr. McCardle's farm, half a mile west of Comox. The concave side of the base was slightly cut or polished, probably to facilitate hafting; and the bevelled edge of the tooth was ground to a convex surface, and shows transverse striations, evidently from repeated sharpening. No knives made of beaver-teeth were found by us in the shell-heaps of the Lower Fraser.[3]

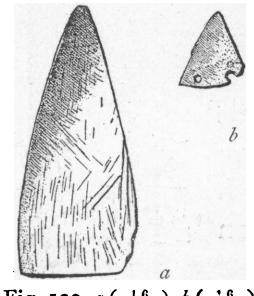


Fig. 109, *a* ($\frac{16}{6443}$), *b* ($\frac{16}{6441}$). Bone Objects. From shell-heap on Mr. McCardle's farm, ½ mile west of Comox. Length, 72 mm., 22 mm.; thickness, about 1 mm.

In Fig. 109 are illustrated two of three thin bone objects of unknown use, which were found in the shell-heap on Mr. McCardle's farm, one half mile west of Comox. The surface of the larger one shows numerous striations caused by rubbing it on a grindstone; and on one side, along the edge, may be seen incisions, apparently made by the slipping of the tool used in cutting it out. The edges are cut square across, and are polished by wear. The object is somewhat warped. A similar specimen, but with an elliptical perforation through the more acute angle, was found in a grave at Lytton.[4] The Lytton specimen, however, had sharp edges. In the figure, *b* shows a fragment of bone with the two sides cut and polished, as are those of *a*. A perforation is gouged or roughly drilled from each side through it

[1] See Vol. I, p. 250; and pp. 155, 166, 180, of this volume. [2] Compare Vol. I, pp. 144, 417.
[3] Compare p. 168 of this volume. [4] Compare Vol. I, Fig. 95, p. 152.

near one edge, and close to the broken part of the object. A corresponding perforation near the opposite edge may be seen to have been broken through. Another specimen, a piece resembling the upper two thirds of the one shown in Fig. 109, *a* ($\frac{16}{6442}$), was found with these. Its edges are slightly more convex.

Fig. 110 illustrates a carving made of ivory, possibly a toggle. The base is flat, and cuts diagonally across the grain of the ivory. Two holes pass through it, — one larger natural and one smaller drilled, — as shown in the illustration. Their openings, as well as all the higher portions of the specimen, are highly polished.

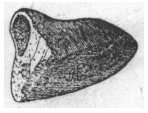


Fig. 110 ($\frac{16}{6553}$). Carving made of Ivory. Found 1.3 metres deep in shell-heap ½ mile east of Comox. Length, 33 mm.; height, 19 mm.

A pendant made of stone, and also a segment of a ring (perhaps an anklet or bracelet) and a crescent, both made of haliotis shell, which are supposed to be personal ornaments, were found. The pendant ($\frac{16}{6653}$) was found in the shell-heap on Mr. Hugh Grant's farm. It is made of fine soft sandstone, is circular in section, slightly larger at the bottom than at the top, and broken off at the lower end. The top was flattened from each side, and was perforated by drilling from each side in the usual way, which left the hole largest at the ends, and tapering to the middle. This end of the pendant is broken off through the perforation. It may have been a pendant for the ear, nose, or neck.

Wristlets and anklets are suggested by the segment, with the ends broken off, of the edge or upper rim of a haliotis shell, previously mentioned. It ($\frac{16}{6641}$) was found in the shell-heap on Mr. Hugh Grant's farm. A narrow strip was cut out of the thick shell, which, if complete, would form a ring not less than 50 mm. by 80 mm., or greater than 90 mm. by 90 mm., inside diameter, and suitable for a bracelet, armlet, or anklet. The sides are rubbed, but one shows part of the inner natural surface of the shell.

In Fig. 111 is illustrated a crescent-shaped ornament made of a part of the shell of *Hinnites giganteus* Gray. There is a perforation through the middle of each horn. These perforations undoubtedly formed the means of suspending the ornament over the chest. The concave edge is flat, with rounded corners, while the convex edge is of the same shape, but somewhat thinner. The shell is considerably disintegrated; but when in use, the inner side was undoubtedly iridescent and of the beautiful purple color for which this shell is noted. The convex surface has been rubbed off until it is quite smooth; but the concave surface, as seen in the figure, shows the waves of the naturally fluted shell.

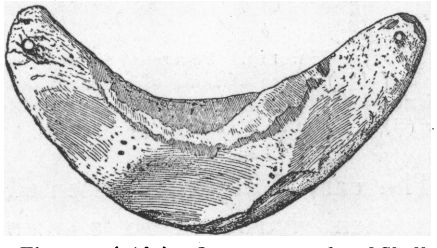


Fig. 111 ($\frac{16}{6551}$). Ornament made of Shell. Found 76 cm. deep in house-embankment ½ mile east of Comox. Length, 110 mm.

No dentalium shells were found; and it seems noteworthy, since here

they can be even more readily obtained than in the Lower Fraser region, where a few occurred.[1] In both the Thompson River region[2] and in the Yakima Valley,[3] where they can be procured only by barter, they are often found in the graves.

In Fig. 112 is shown a perforated disk made of black volcanic rock. The edge is convex; the faces, concave. The perforation tapers with bulging sides from each face, and is quite smooth, the traces of peck-marks having been obliterated. The specimen appears to have been in the fire. Objects of this type are found frequently in the area inhabited by the Kwakiutl. They were used for the well-known hoop and spear game. Some of these are grooved around the circumference, and it has been suggested that they have been used as pulleys, in imitation of those found on ships. There is no evidence, however, which makes this theory plausible.

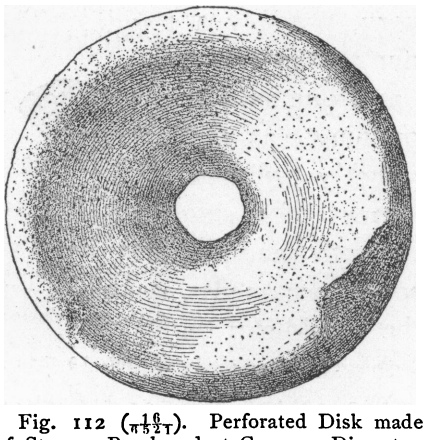


Fig. 112 ($\frac{16}{5252}$). Perforated Disk made of Stone. Purchased at Comox. Diameter, 109 mm.; thickness, 35 mm.

Only three decorated objects were observed. The first of these (Fig. 113, *a*) shows a geometrical design consisting of incised lines similar to the designs found in the Thompson River region. The other two are objects decorated with realistic animal or human carvings. The geometric design is incised on one side of a piece of bone broken off at both ends, oval in section. The design is a little more regular than the corresponding designs from the Thompson River region.

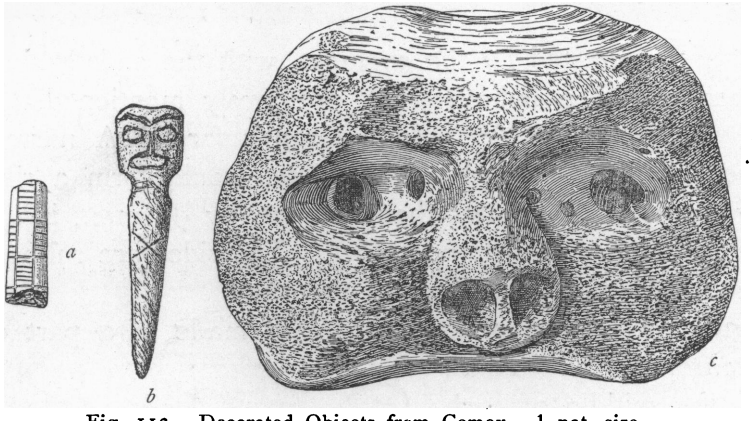


Fig. 113. Decorated Objects from Comox. $\frac{1}{2}$ nat. size.
a ($\frac{16}{7147}$), Piece of bone with incised lines, shell-heap on Mr. Hugh Grant's farm; *b* ($\frac{16}{5025}$), Bone object found in shell-heap on Mr. Hugh Grant's farm; *c* ($\frac{16}{789}$), Sculptured vertebra of a whale.

The carved object represented in Fig. 113, *b*, tapers gradually downward, and is then sharpened to a point from the edges and reverse side. Near the middle of the surface is an incised X. The back shows the marrow-canal as far as the articulation at the upper end, which is hollowed, continuing the canal. The surface shows striations in many places, caused by sharpening it

[1] Compare p. 180 of this volume.
[2] Compare Vol. I, pp. 134, 153, 437, and Figs. 365 and 366 (p. 425), 371 (p. 427), and 379 (p. 431).
[3] See Science, N. S., April 6, 1906, p. 553.

on a grindstone, and is somewhat polished by use or smoothed by disintegration. Fig. 113, *c*, illustrates a vertebra of a whale which has been sculptured to represent a human head. The back and the rear corners have been cut off more or less flatly. On the front the natural foramina have been utilized to represent the eyes. The remaining surface has been cut off more or less to bring the cheeks, brows, and nose into form; while the nostrils have been gouged out, leaving a septum between them. Perhaps the most remarkable feature of this specimen is the skill with which the natural features of the vertebra have been made to serve to represent the desired sculpture. It was found in the shell-heap at Comox by Mr. Robb, and was collected by Dr. Franz Boas in 1888. In form it resembles very much a carved portion of a paint-dish made of stone, which is shown in Fig. 55, *d*, of this volume.

Along the western end of one of the house sites half a mile east of Comox there was no embankment. This site was about twice as long as wide, with the long side towards the beach. A north-and-south cross-section through the middle of it showed that it was made up of layers resting on iron-stained gravel of an orange color. The first layer over the gravel was horizontal, and consisted of beach-shells, shell fragments worn by the action of the surf, and sand. The next layer conformed to the contour of the house site, and was composed of the usual shell-heap material in which shell was predominant. Lying over this was a layer of mould, which was thickest on top of the embankment.

Our knowledge of the method of disposing of the dead near Comox is incomplete, depending on only thirteen instances of the finding of human remains; and of these, all but five were in such a disturbed or fragmentary condition as to be of little service. Some of the bodies were interred in cairns, as is indicated by those found at Cape Lazo, near Comox, near Courtney, at the "potato-patches," and on Denman Island,[1] and by the thin fragments of a human skull ($\frac{99}{2283}$) and two upper vertebræ, fragments of the clavicle, scapula, humerus, and ribs, apparently those of a woman, found in one of the cairns at the "potato-patches."

Skeleton No. 1 ($\frac{99}{2289}$), that of an old man, with the bones of the skull, lumbar vertebræ, and one clavicle much diseased, was found about 30 cm. deep in the black soil, shell, and refuse of the wall of one of the house embankments half a mile east of Comox. It was on the inner slope of the embankment farthest back from the beach,[2] at a point about one-third of the length of the embankment from its western extremity.

Skeleton No. 2 ($\frac{99}{2290}$), that of a young woman, was found 75 cm. deep in the shell and refuse of the western end of one of the house embankments half a mile east of Comox. It may have been an intrusive burial, since the shell layers above it were not distinct. The head was towards the east, with

[1] Compare p. 57 of this volume.

[2] Compare p. 186 of this volume.

the face south. It was in the usual flexed position on the left side, with the hands to the face.

Skeleton No. 3 ($\frac{99}{2291}$), that of a young woman, was found 60 cm. deep in black soil and shell material in the shell-heap about a quarter of a mile west of the Comox Indian village, at the eastern end of the dike, in the field parallel to the road and immediately north of it, on Mr. Hugh Grant's farm. The head was to the north. The body lay on the right side in the usual flexed position.

Skeleton No. 4 ($\frac{99}{2292}$), that of a young person, was found about 45 cm. deep in the shell-heap of one of the house embankments, about half a mile east of Comox. With it were parts of two other human skeletons.

Part of a skeleton of a youth ($\frac{99}{2288}$) was found where it had been disturbed by ploughing, about 30 cm. deep in the shell-heap, at a point nearly seven metres above high tide on Mr. McConnell's farm, about one mile east of Comox. There is a nearly circular hole carefully cut from the upper side through the lower part of each orbit.

Some burned fragments of a human skull ($\frac{16}{6472}$) and some bones of a small child ($\frac{16}{6474}$) were found in the shell-heap on Mr. McCardle's farm, while the bleached tibia of a child ($\frac{99}{2286}$) and fragments of a skull ($\frac{99}{2287}$) were found on the surface of the heap. The fragment of a skull ($\frac{99}{2285}$) was found about an eighth of a mile east of Comox, at a point three metres above high tide. This was of an old person, and had probably fallen from a recent tree-grave. Fragments of a skull ($\frac{99}{2284}$) were found on the surface of the Government Spit. They are bleached and thin. Apparently the skull had been that of a woman.

It has been seen that cairn-burials existed. This is probably the oldest method of which we have evidence at this place. It will be remembered that cairns are found in the Salish area south of here, but have not been reported north of Cape Mudge. The fragment of burned skull just mentioned suggests that cremation may have been practised. Burials were made in the shell-heaps or became covered by shell-heap material, as proved by five examples previously described. Besides this, we have the circumstantial evidence of the parts of skeletons ploughed out; but some or all of these may be from recent graves, perhaps such as may still be seen covered with little houses, surrounded with fences or marked by carved posts, at the Comox Indian village.

It will be noted that here, as in most cases at Port Hammond and Eburne,[1] all the skeletons which could be definitely located were found in that part of the shell-heaps farthest from the water or front of the village. The skeletons were all flexed, and lay upon the side. In no case were objects found in such a manner as to prove that they were buried with the

[1] Compare pp. 186 and 321 of this volume.

bodies. Some of the scattered bones may be accounted for on the supposition of reburial. Apparently undisturbed shell layers were continuous above all skeletons that were found at sufficient depth to show layers above them.

The bones found on the surface of the Government Spit are probably recent, possibly from the traditional graves mentioned on p. 305. The Indians here now bury as do the whites of the neighborhood, but are given to covering the graves with little houses, and some to surrounding them with fences.

In all shell-heap work at Comox, and in fact wherever we worked in 1897 and 1898, specimens were scarce in pure shell layers, and most of them always came from black-soil layers.

Deep Bay.

James Richardson of the Geological Survey of Canada refers, in his field note-book No. 50, on p. 8, to shell-heaps and embankments on a point of land between Deep Bay and Baynes Sound on the south-east.[1] This note-book is in the archives of the Survey at Ottawa. His notes are as follows: —

"Sept. 22nd 1872. Being Sunday I inspected an ancient fortification, in shape it is nearly a true ellipse 265 paces in circumference. The slope of the sides is 15 paces in length, at an angle of 50° (from bottom of trench to top of parapet). From top of parapet to flat four paces. Inside of this circular parapet is a large flat.

"This mound is on a point of land between Baynes Sound on the one side (southeast) and Deep Bay on the other. On the Baynes Sound side the sea seems formerly to have washed the base of this part, or at least to have been within a few feet of it. At present the sea is 70 paces from it, a current having thrown in a lot of sand and stones.

"About 50 paces northward is another, and smaller one. There is a trench dividing the point, and on one side of it the walls are not half so high. Within this last are a lot of shell mounds or kitchen-middens. On the inside of the larger fortification I found one or two small mounds, hearths probably. One hollow place looked like a cache."

The sides of the "parapet," being fifteen metres long, are probably natural, the embankment being simply earth from the flat within or the trench without, thrown up to form a wall along the edge of a natural mound. Dr. C. F. Newcombe informs me that the trench is about seven metres deep.

Nanaimo.

Along the beach north of Nanaimo is a shell-heap of considerable length, but which does not attain a very great height at any point. We made no investigations at this place.

A pestle ($\frac{16}{5682}$) with hat-shaped top, short striking-head, and tapering body, of the type where the upper surface of the hat-shaped top is somewhat flat and forms a rather acute angle with the flare from the body of the pestle, was found on the surface near Nanaimo.

[1] Compare p. 304.

In Fig. 114 is represented a celt-like object made of friable schistose rock found at the South Wellington Mine near Nanaimo by the superintendent of the mine, Mr. John Bryden, in the autumn of 1881. The blade is celt-like, with a convex cutting-edge sharpened but slightly more from one side than from the other. It is lenticular in cross-section, with the sides slightly flattened. The handle is flat, with rounded edges. The perforation shows no signs of wear. The object has apparently been burned.

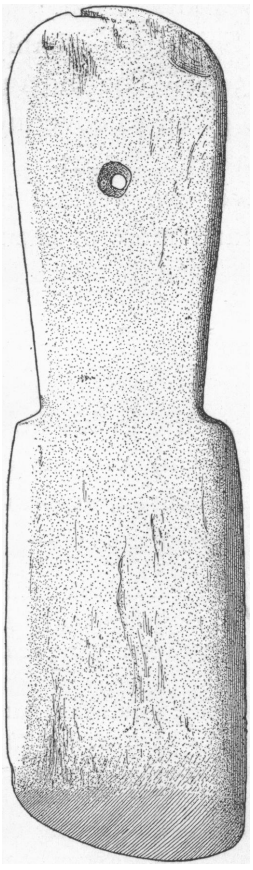


Fig. 114 ($\frac{7}{22692}$). Object made of Stone. From South Wellington mine, near Nanaimo. Collected by Mr. John Bryden. $\frac{1}{2}$ nat. size.

Cowichan.

In the Cowichan Valley are a number of shell-heaps. A small one is located on the western bank of a little creek emptying into the Cowichan River from the north, and about a mile east of the Cowichan railway-station.

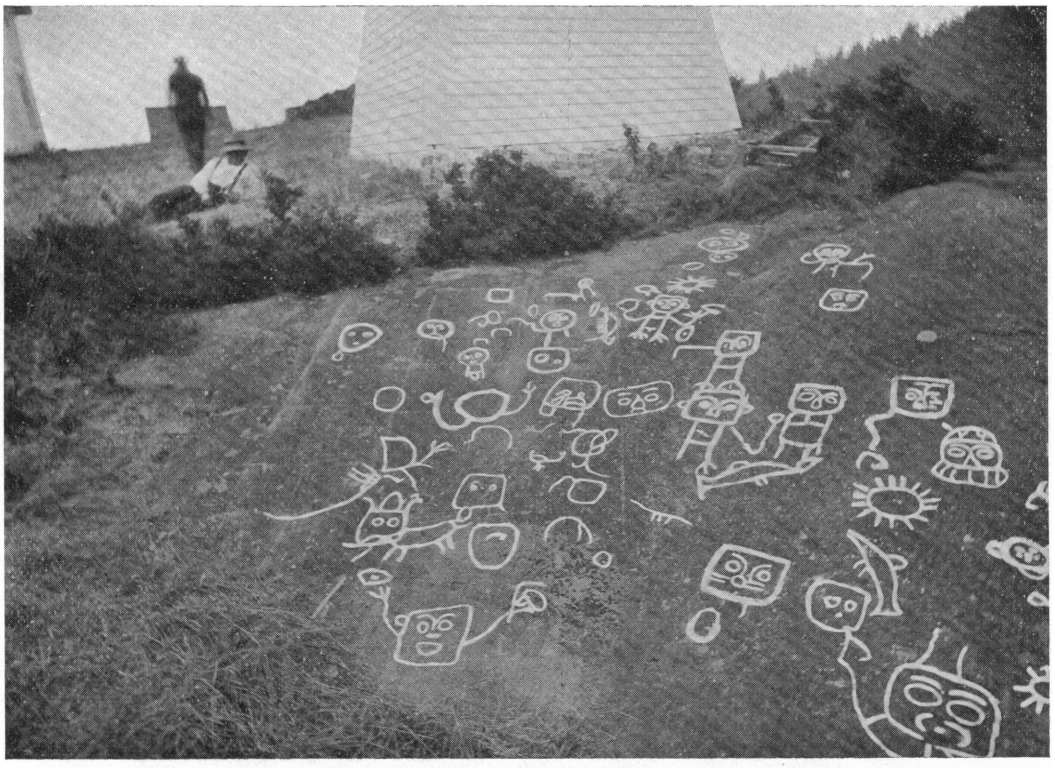
By far the largest shell-heap which we saw in this vicinity was on the south side of Cowichan River at its mouth, and located on the Indian Reservation. The river has cut into this shell-heap, exposing a vertical section about two metres in altitude.

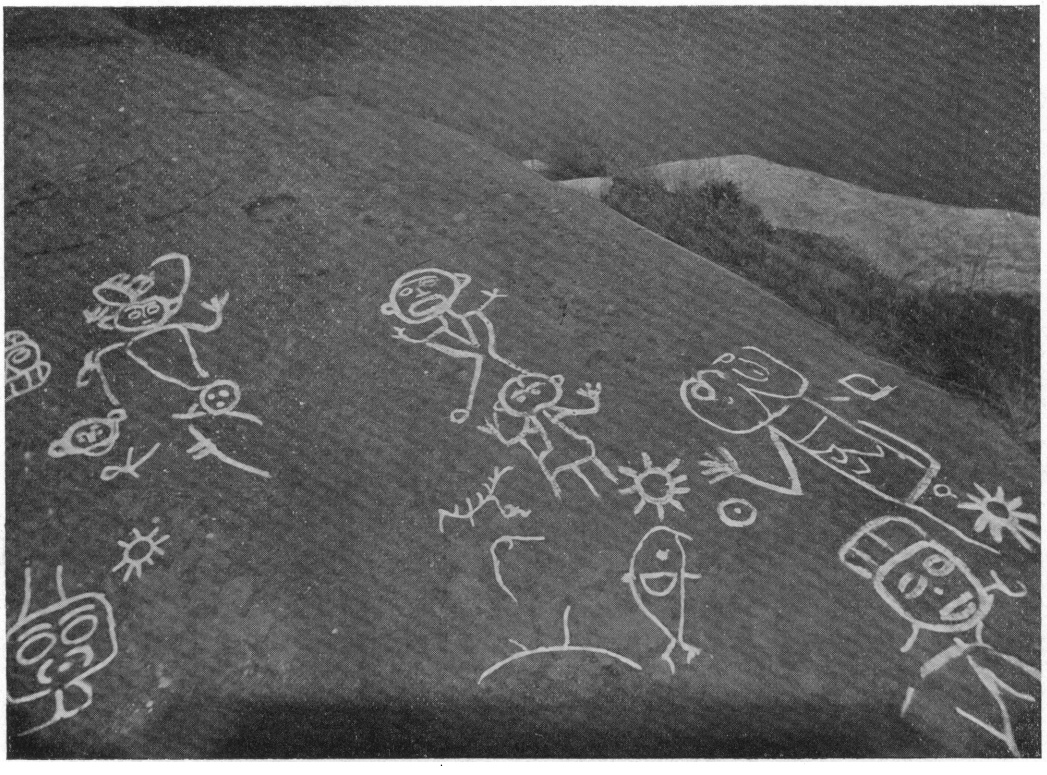
Dr. Newcombe has sent me a photograph of a large number of small disk-shaped beads made of stone, which were found by Mr. J. Humphrey of Chemainus, in a shell-heap near that place. Part of them are in the Field Museum of Natural History. So far as Dr. Newcombe and I are aware, these are the only objects of this sort found on Vancouver Island.

Petroglyphs of the Region between Comox and Nanaimo.

There are two petroglyphs, separated by a fissure in the rock, within a few feet of the Yellow Island Light-House, on Yellow Island, a small island south of Denman Island, on Baynes Sound, near Comox. One of these, on a sloping rock outcrop, is shown in Fig. 115, as drawn from a cast ($\frac{16.1}{359}$) made for the American Museum of Natural History by Dr. Charles F. Newcombe. This petroglyph is also shown in Plate X.

[It will be noticed that the figures as shown on the cast, and those marked by Dr. Newcombe on the rock, show slight deviations. In particular, a number of lines which were obscure on the rock have come out more clearly in the cast. In other cases the differences of outlines are due to differences of interpretation of depressions, which may have been accidental or natural. Attention may be called, for instance, to the two fishes near the lower right-hand corner of Fig. 115, which appear a little to the right of the centre of Fig. 1, Plate X. In the photograph the lower fish does





PETROGLYPHS ON YELLOW ISLAND.

not appear, except its lower outline. It seems likely that the peculiar irregularities of many figures are due to misinterpretation. The petroglyph is characterized by the presence of a considerable number of human figures. Many of those on the western part of the petroglyph are represented by a square or round head and rectangular closed body, while those on the eastern portion (Plate X, Fig. 2) differ decidedly in style from the rest, being characterized by the lack of a line enclosing the trunk below, similar to the outlines on the clubs from the west coast of Vancouver Island shown

Fig. 115 ($\frac{6}{355}$). Petroglyph at Yellow Island, Baynes Sound, near Comox. (Drawn from a cast made by Dr. Charles F. Newcombe). $\frac{1}{24}$ nat. size.

in Fig. 170, *b*, *c*. There is also a striking difference in the style of representation of the face in the two groups of this petroglyph. While in the more elaborate western portion the face is regularly represented by two large eyes, each indicated by a ring, and by eyebrows which are ordinarily connected with the triangular nose, while the mouth is absent, we find in the eastern portion a more pictographic representation, with distinct eyes, eyebrows, nose, and mouth. Another feature

characteristic of this petroglyph is the occurrence of a number of star-shaped figures, probably representing the sun. Of animals, only a number of sea-animals, probably representing the killer-whale, can be clearly distinguished. A figure of a quadruped may be seen at the left-hand end of Fig. 1, Plate X.[1]

The human figure just under the sun in the middle of the petroglyph (Fig. 115) shows that the cross-lines closing the human body must probably be interpreted as the shoulder-line or as a rib-line. It is at the height of the arms; while in the human figures farther to the right, and farther below, the line is drawn a little lower.

Another peculiar trait of this petroglyph is the occurrence of a number of large faces with arms attached directly to the face. One of these may be seen in the lowest left-hand figure (Plate X, Fig. 1). This figure, with the arms extended upward, reminds me forcibly of the appearance of the masked cannibal in the winter ceremonial of the Kwakiutl. The face seen a little to the left and above the one here mentioned, and covered in its lower part by a portion of a figure of a quadruped, also gives the impression that these petroglyphs may represent incidents of the winter ceremonial. This face is characterized by a peculiar curvature of the outline, which is continued in two horn-like projections, one on each outer side of the head, while in the middle there is an oval ornament placed in the middle of the straight top of the head. This figure reminds me of the so-called "xwā'ēxwē."[2] If this interpretation is correct, the petroglyph would probably have to be considered as, comparatively speaking, recent, similar to those of Fort Rupert.[3] — EDITOR.]

A petroglyph on Great Central Lake, to which Mr. John W. Laing was directed from Alberni, is shown in Fig. 116. This lake drains into Alberni Canal. According to Mr. Laing's statement, it is made in the vertical surface of the rock shore of the eastern side of the lake, three miles from the head. It is about halfway between the forest-covered top of a cliff and the water-line, and is a little longer than the cliff is high. I am informed by Dr. Charles F. Newcombe that it has been photographed by Mr. Fleming of Victoria, who states that unreliable illustrations were made of the petroglyph from memory, and were published in one or two English papers, probably in the "London News," also in the "Overland Monthly." The water-color sketch of this petroglyph, from which the present illustration has been made, is probably also unreliable. A petroglyph from Sproat Lake, not far from this region, was published by Professor Franz Boas.[4]

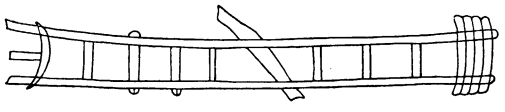


Fig. 116. Petroglyph near Great Central Lake (From a water-color sketch by Mr. Lionel C. Barff.)

There are several petroglyphs on the hilltop, about two miles south of Nanaimo. The place is to the east of the main road running south from Nanaimo, near its termination at an east-and-west road, and immediately to the northeast from an abandoned coal-mine. In many places the moss and vegetation have grown over the edges of the rock-outcrops, and have covered

[1] The peculiar straight stripes seen on this plate were left when making the cast of the petroglyph.

[2] Compare Teit, The Lillooet Indians, Fig. 95, p. 272, of this volume; F. Boas, The Houses of the Kwakiutl Indians (Proceedings of the U. S. National Museum, 1888, p. 213); F. Boas, The Social Organization and the Secret Societies of the Kwakiutl Indians (Report of the U. S. National Museum for 1895, p. 516); and Whymper, Travel and Adventure in the Territory of Alaska, p. 77.

[3] See F. Boas, The Social Organization and the Secret Societies of the Kwakiutl Indians (Report of the U. S. National Museum for 1895, p. 439, Plates 23-26, and Fig. 61 on p. 441).

[4] Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte, 1891, p. 160; also Tenth Annual Report of the Bureau of Ethnology, pp. 44, 45.

PETROGLYPHS NEAR NANAIMO.

large portions of the petroglyphs. These are made up of grooves in the rather soft yellowish-gray sandstone which outcrops in many places on the top and sides of this hill. The largest parts of the grooves are about 10 mm. deep by 35 mm. wide, and were probably pecked into the rock, but the peck-marks seem to have weathered away. This weathering process has obliterated parts of the pictures. This and the color of the sandstone made it difficult to see the petroglyphs without first applying coloring-matter to the shadows in the grooves.

The largest and perhaps the most interesting petroglyph at this place is upon a sloping face of rock, and is shown in Plate XI.[1] At the upper end may be seen the eyes, nose, mouth, and outline of a human face. Immediately below it is represented a fish with two eyes on one side, apparently a sole or halibut. This seems to be hanging by the tail from the mouth of the human face above mentioned. There are several more or less indistinct figures in this vicinity, but they are difficult of interpretation. Immediately below the fish is one which seems to represent a crab; below that, another fish with the head in the opposite direction. There are several other representations of similar fish on this rock. The most conspicuous figures, however, represent a dog-like animal. There are five of these, differing somewhat in details. One of them, the largest, has a dog-like or wolf-like head, with, lolling tongue, three teeth, an eye, and an ear. One fore-leg with three toes, and one hind-leg with indications of toes, are shown. There are two parallel stripes on the body, and a row of spines or very long upright hairs on the back. Several of the lines on the back round over and form an ear-shaped projection; and, as all of the lines are rather too long to represent hairs, it would seem that the proper interpretation of these would be that they are fins or spines. The tail is curled up at the end. Below and parallel with this is a similar figure, somewhat smaller and not so well preserved. The nostril is represented by a pit. There are no longitudinal stripes on the body, but there are lines which probably represent the ribs. Another figure of this sort, immediately above these two, has the two longitudinal stripes on the side; but the teeth were either not indicated, or the lines which represented them have been weathered away. The tail is not curled. To the left, one of these figures is shown with only one stripe on its side, and with a rather short tail, which is not curled. The snout is turned up and back, while the ear is indicated by two concentric lines instead of a single line. Immediately above this is another figure of the same general form, with one fore and one hind leg. The tail is very short, and turns up. There are four transverse stripes on the body. The three spines, which are long, turn forward like hooks. The nose turns down instead of up.

[1] The lower photograph was first reproduced in the Annual Report of the American Museum of Natural History for the Year 1898 (plate opposite p. 16).

Above this figure, and to the left of it, is another, having a head of this type, with the snout turned up, and two teeth indicated. The body consists of a single line, across which are waved stripes, possibly representing the ribs. Back of these, is an inverted human figure represented full face.[1]

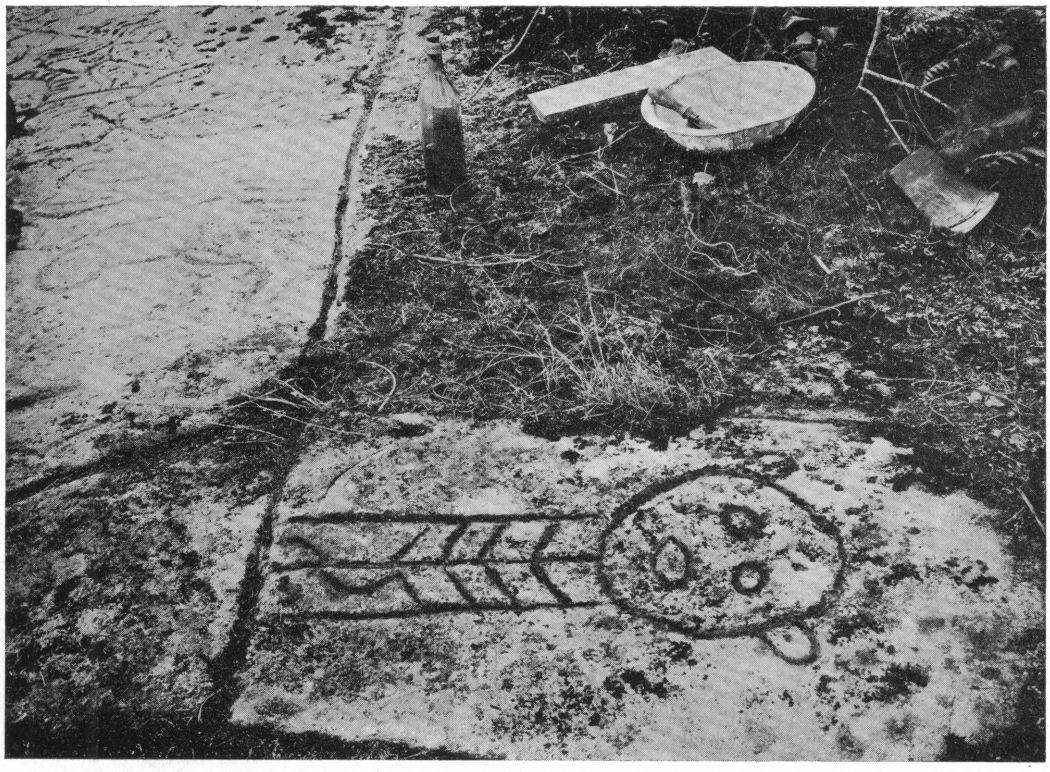
At the lower right-hand corner may be seen a peculiar figure, with a body shaped somewhat like that of a bird. Two legs are represented, each bending forward and terminating in two claws. There is a short tail extending upward, and on the back are five spines. Three more appear on the neck. The head is of about the same size as the body, with a large mouth; and an eye is represented by a circle. On the top of the head are two lines, each of which, a short distance up from the head, bears two lateral branches. While the whole figure seems to resemble that of a bird, these lines on the head somewhat resemble antlers, and suggest that it may represent a deer with only one fore and one hind leg indicated, although in this case the fore-leg bends forward at the knee instead of bending backward as it should. It may perhaps be best interpreted as representing a mythical creature.

The next petroglyph, which is shown in Plate XII, Fig. 1, is to the west, and separated from this one simply by a north-and-south crack in the rock. Its location is under the moss, near where the axe is shown in the picture of the large petroglyph. To the right of the crack is a figure with a human head having two loop-like ears, with a dot in the middle of each. Below the oblique lines on the body are two somewhat irregular lines curving from the middle line. This portion of the figure recalls the lower part of some of the "coppers," and especially the wooden representations of "coppers."

Another petroglyph (shown in Plate XII, Fig. 2) stands on a part of the rock to the east of a wide north-and-south crack which separates it from the large petroglyph previously mentioned. There is a fish in front of it, that, not being touched with charcoal, does not show in the plate. The figure has antler-like projections on the head, back of the ear. Each of these is bifurcated. There are two legs which are outlined instead of being represented by a single line. These may represent the legs of a bird or mythical biped, since they both bend forward. The figure somewhat resembles the previously mentioned bird-like figure. The most striking point regarding this petroglyph is the fact that, while the picture is extremely crude in execution, the spirit of rapid motion is well given. The fish has the head up, and is similar to those on the adjacent rock.

Another petroglyph, illustrated in Fig. 117, *a*, is on another outcrop at some distance from these. It consists of a figure of one of the dog-like animals and a man. The human figure has bar-shaped ear-ornaments. The hair is indicated by seven lines radiating from the top of the head. The

[1] Compare footprints of bear on Plate XX, Fig. 17, of Vol. I.



PETROGLYPHS NEAR NANAIMO.

nose is not represented. The mouth is indicated by a circle and dot. On the body are lines which may indicate the spinal column and ribs. The legs are outlined, as are the feet and ten toes. The animal has an upturned snout, with one nostril represented in it by a dot. Out of the wide-open mouth extends a single line, which evidently represents the tongue. All along the back is a series of spines. The tail is short, and separated from the

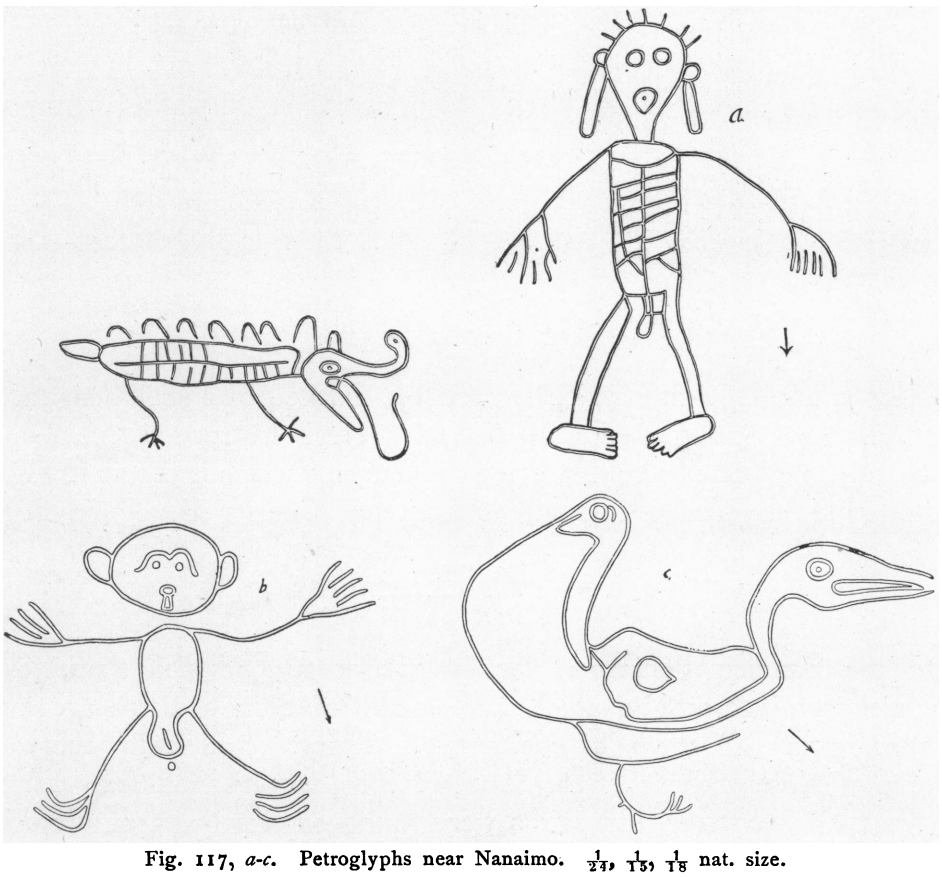


Fig. 117, *a-c*. Petroglyphs near Nanaimo. $\frac{1}{24}$, $\frac{1}{15}$, $\frac{1}{18}$ nat. size.

body by a groove. The lines on the body may represent the vertebræ and the ribs.

A petroglyph near by, shown in Fig. 117, *b*, represents a man. The mouth is nearly circular in form, and has a curious appendage, which may be a labret, tattooing, a beard, or the protruding tongue.

A near-by petroglyph, shown in Fig. 117, *c*, represents a bird. The figure is about 2.5 metres in greatest length. Similar figures of birds occur on a vertical cliff on Yellow Island, next to the petroglyph described before.

[A comparison of these petroglyphs shows that in general style those from Nanaimo and Sproat Lake are very much alike. They are characterized by rather elaborate animal figures executed with considerable skill, with good outlines, and representing animals in vigorous motion. They have also in common the method of presenting the animal body by means of equidistant stripes.

The kinds of animals represented, however, are quite different in the two petroglyphs. On the other hand, the petroglyph of Comox is much cruder, so much so that it is difficult to recognize the objects represented. Further, it is distinguished from the Nanaimo petroglyphs by the occurrence of geometrical figures representing the sun. The human figures shown in the Nanaimo petroglyph also differ in style from those of Comox, although in this case the difference is not so striking. Attention may be called particularly to the human figure near the top of the Nanaimo petroglyph (see Plate XI, Fig. 1). On the plate it is seen upside down. Here the body consists of two lines like those on the east end of the petroglyph at Comox. In both places the ears often represented by large loops with a central dot.

In technical execution the petroglyphs of this whole area differ from those of Fort Rupert and farther north. A comparison with the large petroglyph from Fort Rupert [1] shows the latter to be more nearly in conformity to the style of carving of the modern North Pacific coast art. On the other hand, the faces shown on Plates XXV and XXVI [1] are characterized by pits for eyes and for the mouth, and a groove for the outline of the face. The more elaborate face-forms of Comox and the more pictographic face-forms of Nanaimo do not seem to occur there. Perhaps the large face shown on Plate XXVI [1] may be compared in its style of execution to those of Comox. The few petroglyphs that we know from Alaska [2] are also in a style identical with the modern art of that region. — EDITOR.]

SALT SPRING ISLAND.

There is a village site, which is probably marked by a shell-heap, at Fulford Harbor on Salt Spring (Admiral) Island. Here in 1901 Lieut. G. Pike of H. M. S. "Virago," R. N., collected the tubular pipe which is shown in Fig. 139, *c*. Our information regarding this site is from Dr. Charles F. Newcombe.

SAANICH PENINSULA.

On the Saanich Peninsula, locally known as "Saanich Arm," especially in the vicinity of North Saanich and south of Sidney, there are numerous shell-heaps, many of them of considerable extent. Practically every cove in the shores of North Saanich Bay (Shoal Harbor) has its shell-heap marking the site of an ancient village, and cairns were found on nearly every promontory.

There is a shell-heap of considerable extent and height on the peninsula between North Saanich Bay and Canoe Pass. This heap extends across the base of the small point on the western side of this peninsula, and along the beach some distance northward. On the little point were a number of cairns which were explored by us in 1898.[3] Following this beach northwestward, another shell-heap is found, extending along the shore on the northern side of the small arm of the sea which makes in here, and which ends towards the southwest. This heap is not far from the east-and-west road at this point. Most of Mr. J. Newbigging's collection was found in cutting this road. Here we dug a large trench.

A shell-heap of considerable depth crosses on the point of land north

[1] Report of the U. S. National Museum for 1895, Plates XXIII-XXVI.

[2] See Niblack, The Coast Indians of Alaska, p. 321.

[3] Compare p. 65 of this volume.

of and across the little bay from the North Saanich Post-Office and wharf. This heap is not far across the arm southward from the one previously mentioned, nor is it very far from the cairns and heap to the eastward on the peninsula. There were a large number of cairns in this vicinity, many of which we excavated in 1898.[1] We cut several large trenches in the heap.

A short distance along the beach to the southward, on the little point directly opposite and north of the North Saanich Post-Office, is located still another heap, with a group of cairns on the point beyond it.[2] Here also we made excavations. Along the southwestern shore of the inlet between here and the North Saanich Post-Office is a long shell-heap, which is in no place very high.

At North Saanich Post-Office, on the eastern side of Saanich Arm, about seven miles north of Victoria, and extending southward from the hotel (formerly Blackman and Carr's grist-mill) for some distance along the bay shore, past a little point, is located an extensive shell-heap, which in places reaches a height of 2.5 metres. It follows the shore at least three-quarters of a mile, and in places is 13 metres wide. The southern portion is covered with trees, mostly fir and maple. On top of this shell-ridge were located a large number of cairns, which we explored in 1898.[3] Here we made many excavations, some of them during the same year, others in 1899, some in the main mound, one in a side-heap.

Continuing southward along the coast, passing a small island that is connected with the main island at low water, another shell-heap is encountered following the contour of the beach to the base of the next promontory. Upon this point also were cairns which we excavated. Shell-heap material was found on a point about a mile south-southeast of North Saanich Post-Office, also on the third large point southeast of the Post-Office.[4]

About half a mile south of Sidney is a shell-heap which extends along the eastern side of Saanich Peninsula. This shell-mound is perhaps as extensive as any in this immediate vicinity. Most, if not all, of Mr. Louis Herber's collection, was found at this site.

Bones of animals, including large sea-animals (some of them possibly the walrus, seal, and whale, elk, deer; mountain-goat horns; and beaver-teeth, — were frequently found in the layers. Many of the long bones had been split, probably for extracting the marrow for food or grease. Beaks and bones of birds also occurred.

Skulls of seven dogs were found. These had rather slender muzzles; but the premolars were generally missing in both upper and lower jaws. Three are of a somewhat heavier type than the other four, which are cleaner-

[1] Compare No. 17, p. 65 of this volume.
[2] Compare p. 65 of this volume.
[3] Compare p. 63 of this volume.
[4] See No. 25, p. 67 of this volume. Compare Nos. 12 and 13, p. 66 of this volume.

cut and more slender. This may be simply individual variation, or that of male and female, although there is not usually so much difference between the sexes.

The shells found were apparently of the same species as are now living in the region, and like those found in the heaps at Comox and in the Lower Fraser region. Among those found here are *Mytilus edulis* Linnæus, *Saxidomus nuttalli* Conrad, *Tapes staminea* Conrad, *Ostrea lurida* Carpenter, *Cardium nuttalli* Conrad, *Purpura crispata* Chemnitz, and *Hinnites giganteus* Gray. Shells of landsnails (*Macrocyclus vancouverensis* Lea) were also found; but they probably crawled into the shell-heap, and were not the food of the people who threw out the shells forming the heaps. Barnacles and crab-claws also occur. One clam-shell (*Saxidomus nuttalli* Conrad) was collected which had a small hole at the dome broken through from the outside.

Some white infusorial earth ($\frac{16}{7286}$) that may have been used as paint or for bleaching wool was found.

Both chipped and ground points made of stone, for arrows, knives, spears, etc., are found in the shell-heaps on the Saanich Peninsula. Although we collected twenty-four chipped points and only nineteen that were ground, yet the latter were of better technique and seem to be more characteristic of the region. Fig. 118, in which are shown specimens seen in the collections of the vicinity, pre-, sents approximately the range of forms, which includes lenticular or leaf-shaped, triangular, tanged, and barbed points similar in shape to those found in many other parts of America. The first five (*a-e*) are made of dense black stone resembling trap, similar to that of which many of the chipped points of the Thompson River and Lower Fraser River regions were made.[1] The fact that chipped points of stone are quite frequently found here and in the Lower Fraser Valley points to a relationship between these two places, and differentiates them from other coast regions and the deltas of the Stillaguamish and Skagit Rivers.

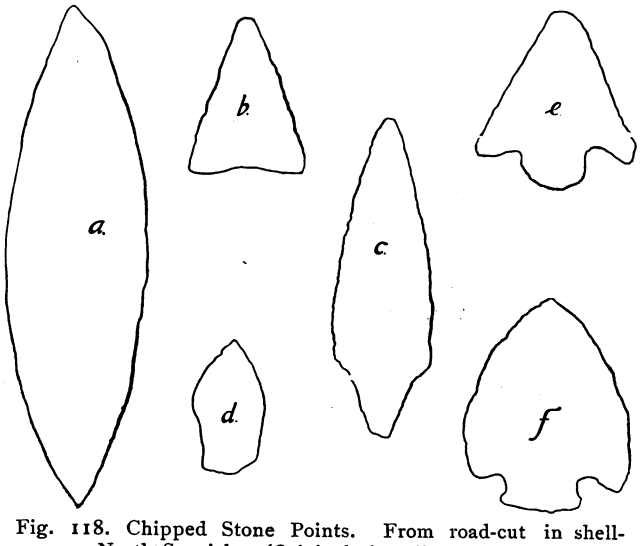


Fig. 118. Chipped Stone Points. From road-cut in shell-heap near North Saanich. (Originals in collection of Mr. J. Newbigging.) ½ nat. size.
a-e, Black stone; *f*, Chalcedony.

In Fig. 119 is shown a large flake of slate which has been roughly chipped, and has been bevelled off from both sides to a knife-like edge

[1] Compare Vol. I, pp. 135-137, 407-409; also pp. 140-143 of this volume.

around the edge of the wedge-like lower half. It may be an adze, or possibly a reject intended originally to be made into a spear or knife point, and discarded because of the difficulty in bringing the thick base to proper dimensions.

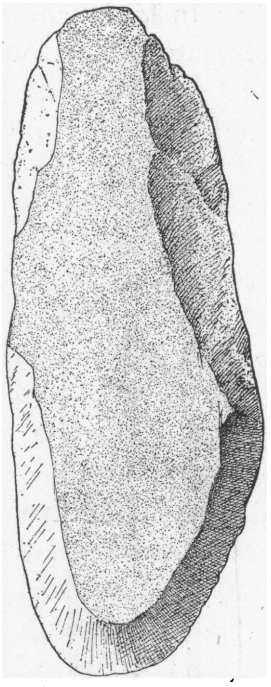


Fig. 119. Chipped and Ground Object made of Slate. From shell-heap near Sidney. (From a sketch by the author of the original in the collection of Mr. Louis Herber.) $\frac{1}{2}$ nat. size.

Figs. 120, 121, show fairly well the range of form of the points ground out of stone. They are leaf-shaped triangular, barbed, and harpoon-shaped. Many of them have a tendency towards an hexagonal section, probably due to the fact that the cleavage of the slate furnished the two sides of such a form, while the sharpening of the edges on each side almost of necessity developed the two intermediate sides of the hexagon. A few were rubbed until they assumed the shape of certain chipped forms, but of course are much smoother. Slate is the only material used for these ground forms.

One point ($_{71}\frac{16}{22}$) found 1.8 metres deep in the shell-heap has a lanceolate point, with three bulging facets on one side and two on the other, on which side, however, there are signs of a median or third facet, making the object hexagonal in cross-section. The base is wedge-shaped, with the end cut squarely across. The side-edges are tapered to the base.

In Fig. 121, *a*, is illustrated a long, narrow, thick point made of slate. The tip is broken off, and the object is somewhat hexagonal in section, but nearly twice

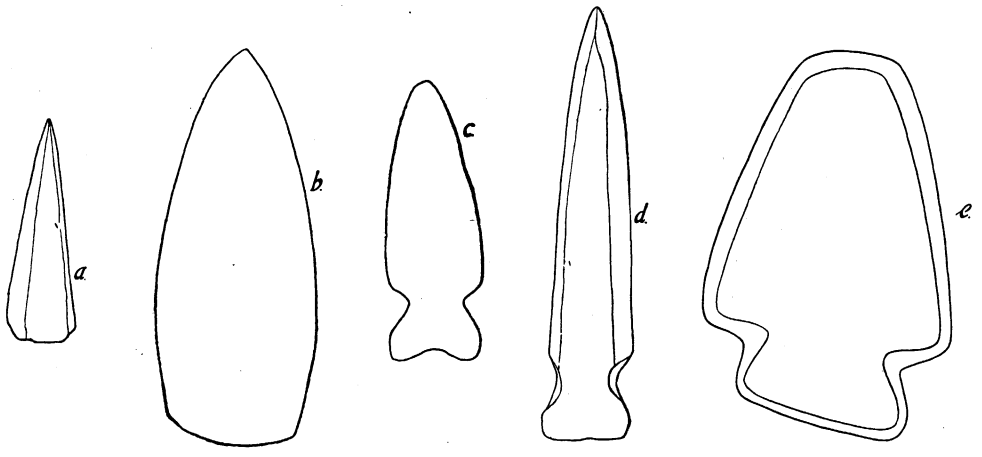


Fig. 120. Ground Slate Points. $\frac{1}{2}$ nat. size.
a-c, From road-cut in shell-heap near North Saanich (from sketches by the author of the originals in the collection of Mr. J. Newbigging); *d*, *e*, From shell-heap near Sidney (from sketches by the author of the originals in the collection of Mr. Louis Herber).

as wide as it is thick near the middle. The base is wedge-shaped, with the edge broken off. Striations caused by grinding it into shape show on nearly

all parts of its surface. The corners as well as the jagged points of the broken base are all rounded by wear, probably by the surf.

In *b* is shown a fragment of a thick harpoon-shaped point ground out of slate. The point is much disintegrated. The shaft is flat at the back edge, sharp at the front, being in general hexagonal in cross-section, as described before, but having the back angle squared across. Immediately above the base, in the sharp edge, is a notch which undercuts a barb and continues in the form of a groove upwards almost parallel with the edge of the object. The lower side of a second notch, and part of a groove, show in this edge near the tip.

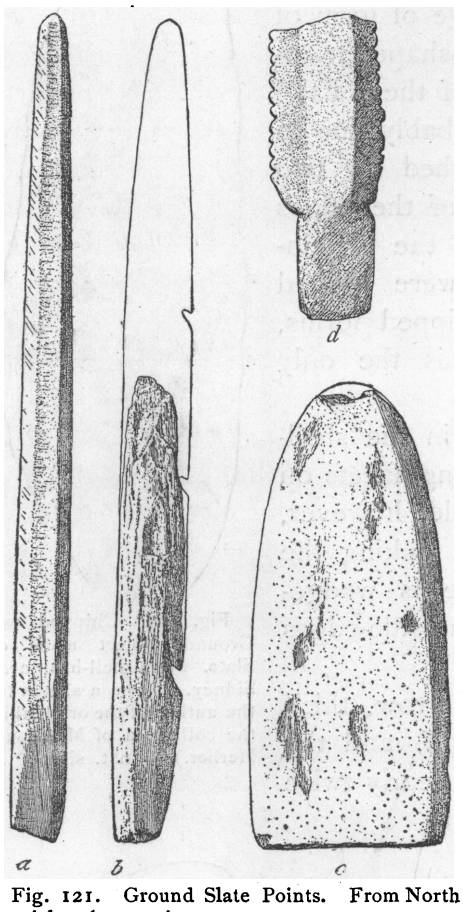


Fig. 121. Ground Slate Points. From North Saanich. ½ nat. size.

a ($\frac{1}{5}\frac{6}{7}\frac{6}{2}\frac{6}{4}$), From road-cut in shell-heap, collected and presented by Mr. J. Newbigging; *b* ($\frac{1}{7}\frac{6}{1}\frac{6}{2}\frac{6}{7}$), Found about 1.7 m. deep in shell-heap; *c* ($\frac{1}{7}\frac{6}{1}\frac{6}{6}\frac{6}{5}$), From shell-heap; *d*, Collected by Mr. A. Anderson in 1889 (from a drawing by Miss E. H. Woods of, the original, No. 794, in Provincial Museum Victoria).

In *c* is shown a wide, thin point ground out of slate, apparently for a spear or knife. It averages 4 mm. in thickness. The edges of both point and sides are sharpened by a short bevel from each side, and are somewhat dulled by wear. On each side of the base may be seen half of a groove by means of which the piece of slate was partly cut through and then broken off, the broken portion having since been somewhat smoothed by rubbing.

In *d* we have the tang and lower end of a point ground out of slate. The tang is nearly rectangular, both in outline and in section. The shaft is flat in the middle, and bevelled off to each edge, so that in section it resembles a flattened hexagon. The edges are serrated.

Points ground out of bone are more numerous than those made of stone, and few are made of antler. Figs. 122, 123, and 141 show the range of forms of these. There are long and short points, sharp at both ends, that are probably fish-rake teeth; other simple long and short forms that may be points of spears or arrows; and some short points that probably are barbs for fish-spears, harpoon-points, or halibut-hooks. There are over fifty simple bone points in our collection. Many others are barbed, and no doubt are harpoon-points. Some of these harpoon-points are simple, others specialized, and some have a tang. A few have a tang and guard. Some are decorated with geometric designs (see Fig. 141).

Fig. 122, *a*, *b*, illustrates two points made of bone, which were probably used as fish-rake teeth. These were found in the shell-heap at North Saanich. The first is made from a section of the wall of a firm bone, and is bevelled from near the middle to a point at each end. The tip is slightly sharper than the base, which tends to be rectangular in section. The object is smooth from disintegration. There is a similar point in the Newbigging collection. The second is made from a portion of the wall of a bone of a young animal. The base is rectangular in section, the point rounded and polished from use. Striations caused by grinding the bone into shape show on many portions of its surface, and the large interior bone cells and a portion of the marrow-canal show on one side of the specimen. There are at least six points of this rather specialized form in the collection.

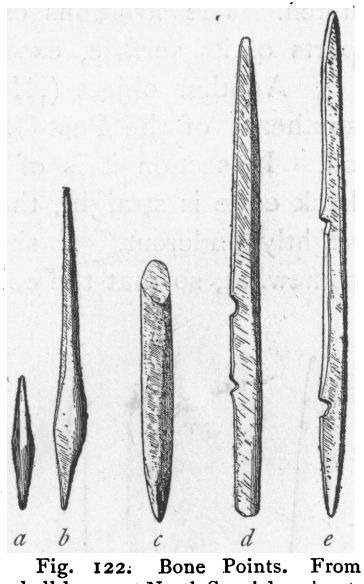


Fig. 122. Bone Points. From shell-heaps at North Saanich. ½ nat. size.

a ($\frac{16}{7152}$), From Trench No. 3, 15 cm. deep; *b* ($\frac{16}{7226}$), *c* ($\frac{16}{7235}$), *d* ($\frac{16}{7211}$); *e* ($\frac{16}{7115}$), found southwest of the Post-Office, and presented by Mr. Alexander McDonald.

Fig. 122, *c*, illustrates a point made of a piece of the wall of a large firm bone. It is irregularly circular in section near the point, but near the base tends towards a square section, with bulging sides and rounded corners. It is cut off diagonally at the base, with a convex surface, which suggests that it might have been lashed to other objects to form a barb for a fish-spear, harpoon-point, or halibut-hook. The tip of the base is battered, as if from being pounded. The surface shows striations, and is highly polished near the point by use.

In the Newbigging collection are points of bone of simple forms, similar to those sometimes found in the Thompson River region,[1] and common in the Fraser Delta country.[2] They are from 5 cm. to 20 cm. long. Only two barbs — of the flat-bladed type — similar to the specimens from Comox described on p. 310, and to the barb from Port Hammond shown in Fig. 15 of this volume, were found here.

Twenty-two barbed points or harpoons were collected, besides some here figured which were seen in local collections. Fig. 122, *d*, *e*, shows two barbed points made of bone. The surface of each is smooth from disintegration and wear. The first, near its point, is somewhat triangular in section, while the shaft is of the form of an irregular flattened hexagonal prism with the four least obtuse corners rounded. Towards the lower end it is more nearly oval in section. The base is broken off from the bottom of a notch in one edge of the shaft. The bone still contains a considerable amount of animal matter, and is hard and firm. The striations caused by smoothing it on a grindstone

[1] Compare Vol. I, Fig. 336, *a*, *b*, p. 410.

[2] Compare Fig. 13, *h*, p. 145 of this volume.

show on all parts of its surface, while traces of the marrow-canal may be seen on the reverse between the base and the first notch. The second is sharp at both ends, which are somewhat irregular in section. The shaft has flat sides, but rounded edges. In two places it is notched across the front edge, which is somewhat thinner than the back. From near the bottom of the upper one the edge of the shaft is cut away to the top of the next notch. The striations caused by smoothing it on a grindstone show on many parts of its surface, except where they are obliterated by polish.

Another object ($\frac{16}{5751}$) found in the shell-heap at a point about 320 metres southeast of the Post-Office was pointed at both ends, but one tip is broken off. In section it is of the form of a rectangle, with rounded corners. The back edge is straight, the front convex, and there is a somewhat square notch, slightly undercut. A short distance below the notch the front edge is whittled somewhat, so that the convexity assumes a nearly straight line to the broken tip.

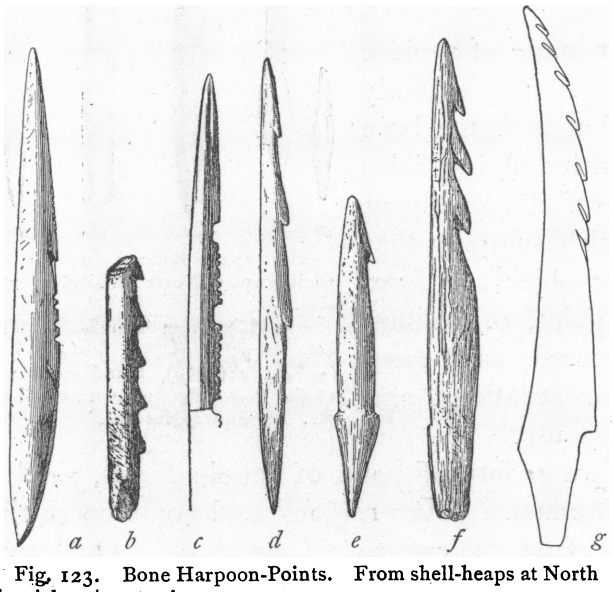


Fig. 123. Bone Harpoon-Points. From shell-heaps at North Saanich. $\frac{1}{2}$ nat. size.
a ($\frac{16}{7212}$), *b* ($\frac{16}{7214}$), *c* ($\frac{16}{7211}$), *d* ($\frac{16}{7213}$); *e* ($\frac{16}{5762}$), Found 1 metre deep; *f* ($\frac{16}{7209}$), Made of antler; *g*, From a sketch by the author of the original in the collection of Mr. J. Newbigging.

In Fig. 123 are shown a number of specimens of harpoon-points made of bone. These are all somewhat oval in cross-section, but sharper at the barbed edge than at the back. The first of these (*a*) has a number of small notches cut across its sharper edge, and also two longer slanting barbs. The second specimen (*b*) is made of hard bone. The base is wedge-shaped. The barbs are set out by cutting at right angles across the edge. In the notches under each barb are one or more incisions at right angles to the edge. The surface is quite highly polished, especially over the points of the barbs, and shows striations, those on the base having been made since the shank became polished. The third point (*c*) is made of very hard close-grained bone, which resembles ivory in its texture. Large bone cells show at the point. The broken end of the base is somewhat polished. There is a longitudinal incision on each side of the point, extending on one side from the base nearly to the tip; on the obverse this incision extends clear to the point. Another (*d*) is a barbed point of typical shape made of bone or antler. The tang is slightly squared. The surface, where not greatly disintegrated, has been highly polished by that process, and the entire surface of the tang for a distance of about 20 mm.

from its tip is so very much disintegrated that it is slightly smaller than it was originally. It is possible that this portion of the object was held in some material which, when it decayed, caused the more rapid disintegration of this portion. The next point (*e*) is made of bone or antler, the large cells of which show on the reverse. The point is somewhat wedge-shaped. Marks of whittling, such as may be caused by shaping an object with a scraper or flake made of stone, show on the surface. The point (*f*) is made of antler. The barbs are each cut at right angles across on the upper edge, and have two facets on the lower edge. The tang is square at the back. At the front tip there has been a slight knob, which has been broken off. This knob reminds us of similar projections on the base of the harpoon-points,[1] which were incised to represent fish, and found in the main shell-heap at Eburne.

Another specimen, shown in Fig. 141, *a*, is long, slender, and made of antler. The tip is lanceolate, but elsewhere it is oval in section, except at the base, where it has the shape of a truncated wedge, with the front edge rounded and the back one cut square across. There is a projection on the front edge at the beginning of this tang, which slopes gradually to a smaller one at the base. Such projections I have seen on points bearing incised decoration[1] from the main shell-heap at Eburne on the Lower Fraser. There are three graceful barbs projecting from the same edge as do the small projections above mentioned. Their front edges follow the line of two low waves. These barbs are cut off square at their ends, are nearly triangular in section, but the lower side has two facets and is undercut on each side to about the middle of the oval shaft. The specimen is one of the most graceful in line, delicate in decoration, and excellent in technique, that I have seen from the Northwest coast of America.

Several other broken barbed points were found ($\frac{16}{7216}$, $\frac{16}{748}$, $\frac{16}{7162}$, $\frac{16}{7191}$). Some of these have, near the base, barbs or projections running towards the tip. These probably served to hold the point to its shaft. The second of these specimens has a blunt point.

In the collection of Mr. Louis Herber is a point from the shell-heap near Sidney, 10 cm. long, of the type illustrated in Fig. 18, *a*, p. 152 of this volume. It has two barbs. Another (see Fig. 123, *g*) is provided with many small barbs near the tip. It was found about 2.5 metres deep in the road-cut in the shell-heap near North Saanich.

Certain objects, besides points and barbs, have been found, which apparently were used in fishing. They consist of both perforated and grooved stones, which were probably used as net-sinkers or weights for setting lines. Fig. 124, *a*, shows an oblong sandstone pebble, across a little more than one side of which are two grooves made by pecking. The upper groove has been deepened by rubbing. The specimen has apparently been in the

[1] Compare Fig. 52 of this volume.

fire. In *b* is shown an ovoid pebble the grooves of which are indicated in the figure and extend over both sides. These grooves were apparently pecked into the stone, and no doubt served for the attachment of cords. Fig. 125 represents two disk-shaped stones perforated through the centre by a hole made in the usual way, countersunk from each side of the object by drilling or pecking. The first is a rounded pebble about 20 mm. thick, with correspondingly large countersunk areas; the second is of slate, about 10 mm. thick, and with such areas proportionately small. If not sinkers, these may have been used in a game (see p. 320).

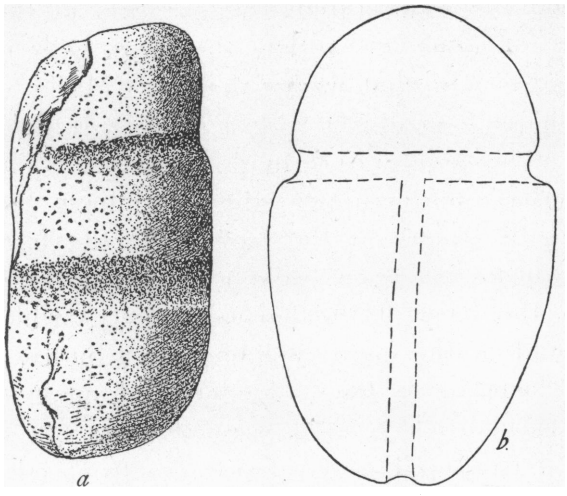


Fig. 124. Grooved Stones. From North Saanich. $\frac{1}{2}$ nat. size.
a ($\frac{16}{5717}$); *b*, From road-cut (from a sketch by the author of the original in the collection of Mr. J. Newbigging).

Two flat oval pebbles ($\frac{16}{5717}$ and $\frac{16}{7113}$) were secured. The first I purchased, the second I found on the beach. They are perforated in the usual way, tapering from each side. In the first, the hole, which is near the centre, seems to be worn; in the second it is near one end and is not worn. These were probably sinkers similar to those found at Comox (see p. 311), and not unlike those found in the shell-heaps of the Lower Fraser.[1]

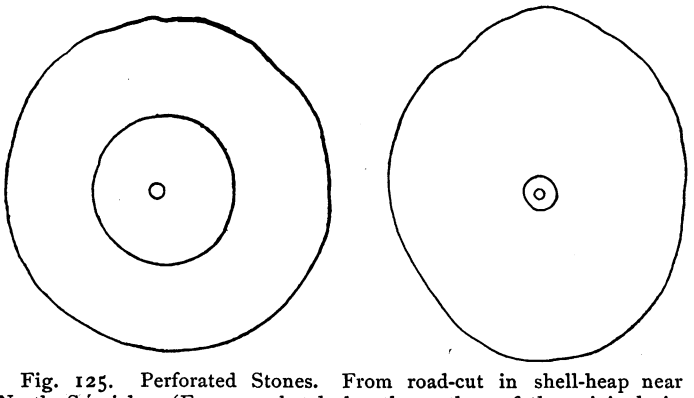


Fig. 125. Perforated Stones. From road-cut in shell-heap near North Saanich. (From a sketch by the author of the originals in the collection of Mr. J. Newbigging.) $\frac{1}{2}$ nat. size.

Many soot-covered, broken, burned, and crackled pebbles were found on and in the shell-heaps. These were probably used in boiling.

Pestles made of stone, many or all of which may have served more often for hammers than for crushing dried meat, berries, etc., are commonly found here, although we secured only two fragments. Those with concave bases no doubt served only as wood-worker's tools. Their employment for crushing food causes the faces to become convex.

These hammers were made by pecking or grinding, and usually have a polish that was applied purposely or by handling. The typical pestle (Fig. 126, *a*) is circular in section, and has a head at each end. The lower end or

[1] Compare Fig. 22, *a*, *b*, p. 155 of this volume.

striking-head is somewhat larger than the upper. There were several pestles of this type from the shell-heap near Sidney, in the collection of Mr. Louis Herber.

One head of a pestle ($\frac{16}{8}$) found in Cairn No. 17 [1] has a short head with rounded edges and a flat face. The pestle or hammer shown in Fig. 126, *d*, resembles in form those found in the Thompson River region.[2] A

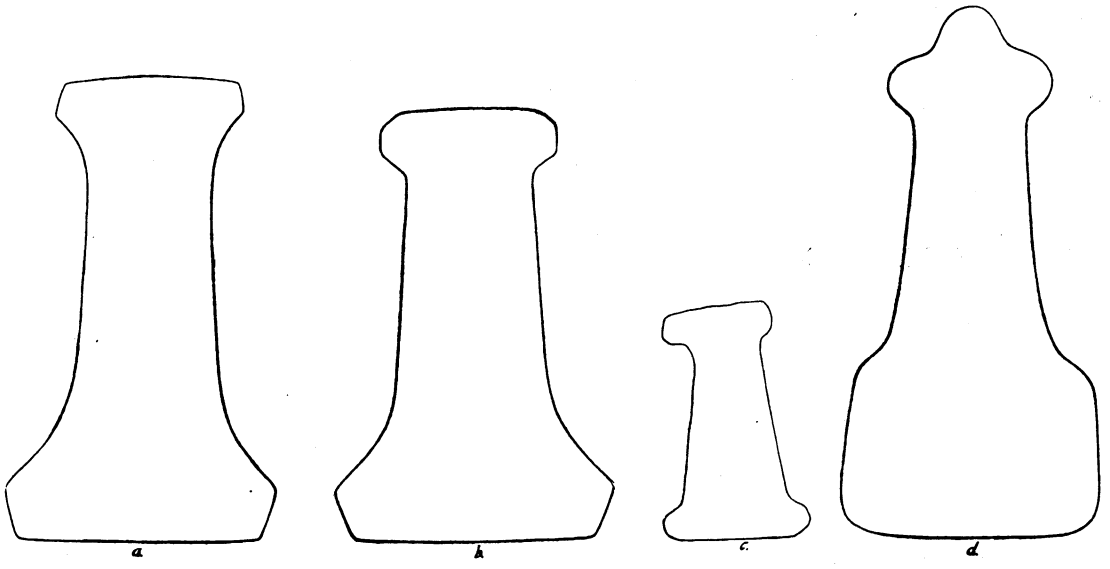


Fig. 126. Stone Hammers. (From sketches made by the author.) $\frac{1}{3}$ nat. size.
a, *d*, From Sidney (collection of Mr. Louis Herber); *b*, From North Saanich (collection of Mr. Alexander McDonald); *c*, From road-cut at North Saanich (collection of Mr. J. Newbigging).

pestle ($\frac{16}{8}$), the top of which was found on the surface, had a body gradually tapering into a rounded, conoid top, except that, about 15 cm. from the top the body expands into a ring, about 35 cm. wide, which gradually merges into the body and into the top. The ring is flattened on two opposite sides, so that from one edge the top suggests an animal head, the wider parts of the ring resembling ears. The tip is fractured, apparently by pounding with it.

Four flat pieces of fine-grained and of coarse sandstone, two of which are roughly squared at the edge, seem to have served as whetstones. A rather irregular pencil-shaped object of slate,[3] similar to those of the Thompson region, and a slab rounded at one edge, bevelled at the other, probably served the same purpose. The last-named object may have been used for cutting out celts.[4]

Mortars made of stone are found in this vicinity. We collected six specimens. Some are flat sandstone slabs, in one side of which are from one to four shallow oval hollows. Such mortars were also found in the shell-heaps of the Fraser Delta.[5] Others are of the usual bowl-shaped type more or less common throughout the whole of America.[6]

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[1] See p. 65 of this volume. [2] Compare Vol. I, Fig. 27, p. 138.
[3] See Vol. I, p. 417, and p. 168 of this volume. [4] See Vol. I, Fig. 47 (p. 143) and p. 417.
[5] Compare p. 158 of this volume. [6] See also Figs. 142; 183, *a*, *c*, *d*; 184, *b*.

The sculpture representing a fin-back whale, shown in Fig. 188, *a*, was evidently used as a mortar. It may be considered as belonging to the flat type, and having but one depression on each side. Another of this type, with two parallel oval hollows in one side, was found at Saanich by Mr. A. A. Anderson in 1887 (Provincial Museum, Victoria, Cat. No. 624).

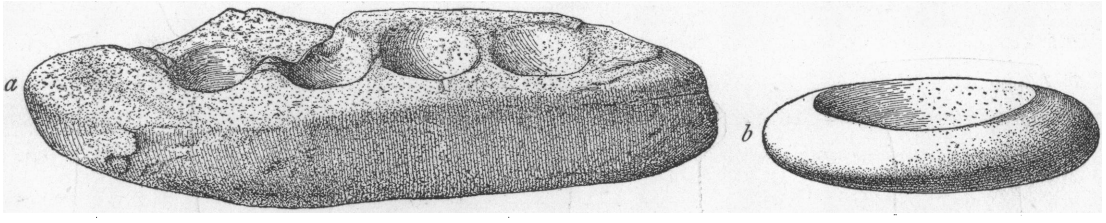

Fig. 127, *a* ($\frac{16}{7111}$), *b* ($\frac{16}{5111}$). Stone Mortars. From North Saanich. ¼ nat. size. *a*, Made of sandstone.

Fig. 127, *a*, illustrates a flat slab of natural stratified sandstone weathered or water-worn. It is irregular in outline. The lower side has been rubbed in places, as if having been used as a whetstone; and in the upper side is a row of four oblong depressions, with nearly parallel sides and ends, but rounded corners. They were roughly formed by pecking, and smoothed by grinding. The peck-marks still show quite prominently. These hollows are from 13 mm. to 22 mm. deep. It was found in a shell-heap.

Fig. 127, *b*, illustrates a mortar of the usual bowl-shaped type, made by pecking and grinding a saucer-shaped depression in one side of a natural flat oval pebble of gray trap. The bowl is 16 mm. deep and 118 mm. by 107 mm. in diameter.

A large oval water-worn bowlder of coarse sandstone ($\frac{16}{56\,47}$), found in the shell-heap over skeleton No. 4 ($\frac{99}{1701}$) has a cup-shaped depression, 95 mm. in diameter and 44 mm. in depth near the end of one somewhat flat side. A small irregular water-worn pebble of fine sandstone ($\frac{16}{7110}$) was found on the surface. A part of the base has scaled off, and has been smoothed as if from use as a whetstone or to flatten the base. In the upper surface is a saucer-shaped mortar which shows peck-marks.

A specimen made from a symmetrical pebble, originally circular in outline and oval in cross-section ($\frac{16}{57\,54}$), was found 30 cm. deep in the shell-heap about three hundred and fifty metres southeast of the Post-Office. One edge is broken off. The upper surface has been smoothed, making a concavity about 2 mm. deep. This object probably was used as a mortar or anvil.

Celts of the usual form, made of stone, were frequently seen, but only four simple blades were collected. Another one, made of stone, but which may have been used as a wedge, was obtained. One celt-like blade made of shell was found. These are shorter than those found in the Thompson River region, and resemble those of the Fraser Delta previously described.[1]

[1] See pp. 163 et seq. of this volume.

A few of the celts of this region have fairly long bevels at the cutting-edge. In Mr. J. Newbigging's collection are celts sharpened by bevelling from each side, and others with the bevel much greater from the flatter side than from the rounder side.

In the collection of Mr. Louis Herber is a piece of stone which was in process of being grooved to make two celts, but the ground groove by means of which it was to be cut in two has not been completed. It is similar to the specimens shown in Fig. 153. The tops of some of the celts seem to have been shivered as if they had been pounded. This suggests that the object may have been used, at least part of the time, as a chisel, without being hafted.

Fig. 128, *a*, shows a very unusual celt made of green chloritic slate. It is sharpened on the side edge, not at the end, the bevelled sides extending nearly to the top, which is much battered. The bevelling was done after the rough chipping was completed, as is shown by marks of grinding on some of the chipped surfaces. The wider end is somewhat polished by wear on the higher points. Signs of battering at the top suggest that it was used as a wedge rather than as an adze.

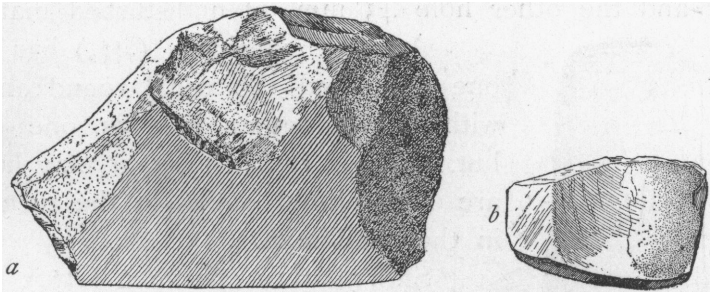

Fig. 128, *a* ($\frac{1}{5}\frac{6}{1}\frac{6}{2}\frac{6}{6}$), *b* ($\frac{1}{7}\frac{6}{1}\frac{6}{3}\frac{6}{9}$). Celts. From North Saanich. $\frac{1}{2}$ nat. size
a, Made of stone, from road-cut, presented by Mr. J. Newbigging; *b*, Made of shell, found 1 metre deep.

In Fig. 128, *b*, is illustrated a fragment of a celt or whaling-harpoon point made of shell, apparently that of the large mussel *Mytilus californianus* Conrad. The side-edges are cut square across and are somewhat polished. The upper edge seems to be broken, but it is decidedly worn and somewhat ground in places, suggesting that the blade was used after the upper end had been broken off. The higher parts of the concave side are smoothed, as are also those of the convex side; while the edge is bevelled smoothly across, forming a cutting-edge with the convex side at an angle of about 45°. On the reverse is a longitudinal incision which, if ground through, would cut off the left side-edge at the line where the smoothing of the convex surface has removed the pearl layer of the shell.

Celts were sometimes fastened to handles by means of a fore-haft made of antler. We found seven entire and four broken specimens of such hafts, besides five pieces apparently in process of manufacture. Six of these resemble those found in the Fraser Delta,[1] in that they are plain cylinders, but one is halved at the upper end instead of having a hole for the attachment of the handle.[2]

[1] Compare pp. 164—166 of this volume.

[2] Compare Figs. 107, 157.

Fig. 129 shows a celt-haft made of a piece of antler. The surface is slightly smoothed, but otherwise presents the natural surface of the material. The upper end is rounded over, and shows marks of hacking. The hole in the same end is angular, slightly trapezoidal in section, being 23 mm. long by 8 mm. wide and 22 mm. deep. The form of this hole suggests that the haft was used for an iron tool; and this fact, together with the marks of hacking, suggest that the object was made since the advent of iron tools into the region. The lower end is hacked, bevelled, and rounded from the sides towards the hole in its end. This cavity is oval in section, corresponding somewhat to the form of the antler, and is 25 mm. deep, leaving between it and the other hole 43 mm. of undisturbed material.

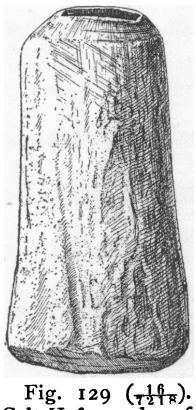

Fig. 129 ($\frac{16}{1218}$). Celt-Haft made of Antler. From shell-heap at North Saanich. ½ nat. size.

Another specimen ($\frac{16}{1219}$) has a small rectangular hole in one end, and the usual round one in the other. One ($\frac{16}{1211}$) with a rectangular hole in one end has none in the other, but, as it is rather long, it may have been unfinished. There are rust-colored stains in the rectangular hole. It was found in the shell-heap.

Still another specimen ($\frac{16}{1223}$), also found in the shell-heap, has a somewhat rectangular hole in one end, but is much decomposed. There are stains on various parts of this hole which resemble iron-rust, but they do not react to a chemical test for iron. The other end of the object is flat and much battered. Presumably it served as a chisel-handle.

A fifth haft ($\frac{16}{1176}$) also has a somewhat rectangular hole, but the form is not quite definite. The upper end is cut off.

No celts small enough to fit the narrow rectangular holes here described were found. No signs of iron celts made of files, chisels, or other iron blades, and fitting these holes, were found on the Saanich Peninsula, either in the hafts or elsewhere; but it must be remembered that in the shell-heaps of the Lower Fraser only one haft was found with a celt-blade in place, although stone celt-blades like it were frequently found on the surface and in the heaps. Some of those celts were nearly small enough to fit the smallest rectangular hole in the hafts found here;[1] also a celt found here, although too large to fit these small holes, has rectangular edges. A hafted iron adze of this type was found by me in the Lillooet Valley.[2] No bone or shell blades that approximate the size and shape of these haft-holes were found here, and it does not seem plausible that blades of these materials were used with the hafts.

Fig. 130, *a*, shows a fragment, apparently about half, of a celt-haft made of a large piece of antler. The upper portion has been cut away and hollowed out so that the complete specimen must have had a V-shaped vice-

[1] Compare p. 164 of this volume.

[2] See p. 204 of this volume.

like opening in the end, of a shape suitable for the hafting of the ordinary stone celt. The lower end has been rounded off from the outside to the edge of the hole in that end of the haft. This hole evidently conformed rather closely to the outline of the antler. The specimen seems to be a specialized form of that sort of haft which has in one end a more or less circular hole for the reception of the extension to the handle, and in the other end a hole of lenticular cross-section for the reception of a stone celt.

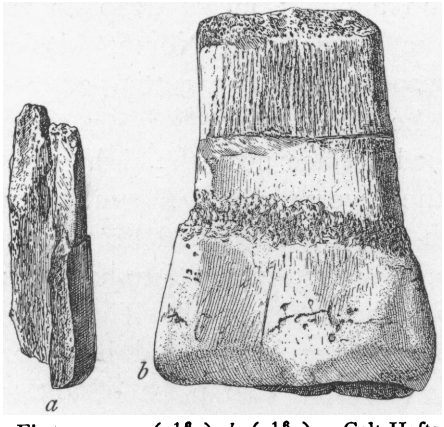

Fig. 130, *a* ($\frac{1}{7}\frac{6}{1}\frac{6}{2}\frac{6}{7}$) *b* ($\frac{1}{7}\frac{6}{1}\frac{6}{8}\frac{6}{1}$). Celt-Hafts made of Antler. From shell-heaps at North Saanich. Found 60 cm. deep. $\frac{1}{2}$ nat. size.

In Fig. 130, *b*, we have a celt-haft made of a very large piece of antler. It is roughly oval in section, but with sides considerably flattened. The entire surface is much disintegrated, which on the higher round parts of the antler results in a rather high polish. The upper end, instead of having a hole in it for the reception of the handle, is cut off flat about one-third of its thickness. The cells of antler at this end of the object are very much compressed, and the grain is destroyed, showing the effects of severe battering. Across this side of the haft, and slightly below the middle, is a pecked groove which extends down and over the edges to the opposite side. The lower end is considerably bevelled off to meet the hole for the reception of the celt. This hole is roughly lenticular in section, and is 40 mm. deep. This is not so deep that any lashing which might be wound about the previously mentioned groove would be of service in holding the celt in place, so that the groove must have served either to prevent the antler from splitting or to hold it securely to a handle. The haft is split up both edges and up one side, from the lower end. The battered top suggests that the hafted celt has been used at times as a chisel.

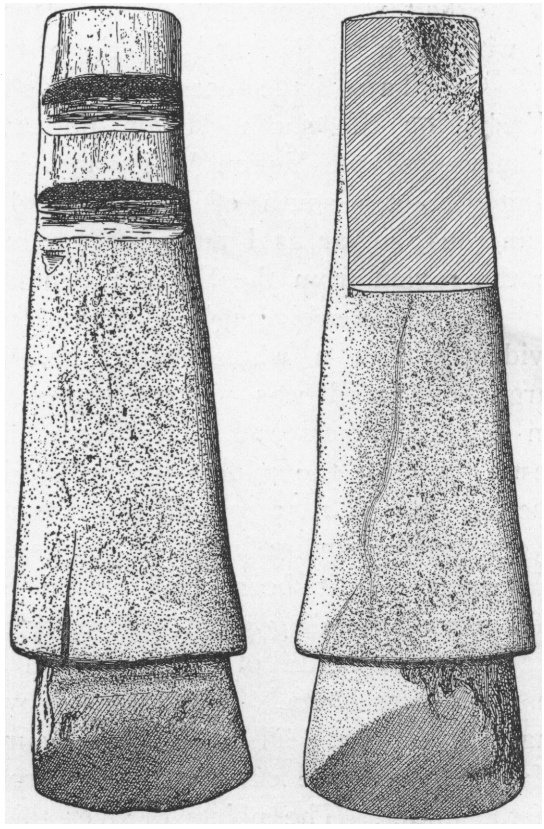

Fig. 131 ($\frac{6}{1}\frac{0}{2}\frac{0}{1}\frac{0}{3}$). Hafted Serpentine Celt. From Nome, Alaska. Collected by Mr. C. E. Glazier. $\frac{2}{3}$ nat. size.

This specimen may be compared with the fore-haft carrying a celt shown in Fig. 131, which is said to have been found about 1 metre deep on the beach half a mile above the mouth of Snake River, near Nome, Alaska. The celt is made of a greenish-blue, flaky serpentine. The cutting-edge is bevelled more from the rear side than from the front, and a groove shows on the same side about halfway down the exposed surface near the right edge, and at right angles to it. Horizontally across the reverse, about 6 mm. below the haft, is a groove about 5 mm. wide, which looks as if it had been made with a rat-tail file. The celt fits fairly close in a socket in the fore-haft, and is tightly held in place. It has apparently never been removed. The socket end of the haft is cut square across, but its outer edge is rounded by wear. The side-edges of the haft near the top are whittled. The piece of antler, which is rather flat, is no doubt from a caribou. The upper portion of the back of the haft is sliced off in order to lash it to the flat end of a handle. The part of the haft below the portion cut away for this purpose is split or shivered downward from the bottom of the halved section. Possibly this was done in cutting it into shape. There are two grooves across the upper end of the haft which served to lash it to the handle. These appear as if hacked in with an iron tool, and the tip of the haft is hacked nearly square across.

Celt hafts have been found at Comox on the north, and at Utsalady, Wash., on the south. I am not aware of any specimen found north of Comox until the Yukon Valley in Alaska is reached, nor of any found in the United States south of Utsalady. In the area under discussion they are numerous, so far as I am aware, only in the heaps of the Lower Fraser and in the region from the Saanich Peninsula to Victoria.

In Mr. Newbigging's collection from North Saanich was a piece of bone, evidently from a whale, which had a large hole drilled through near the larger end, and was shaped somewhat like a short handle, such as is seen on stone hammers and adzes from Alaska which have the end of the handle resting against the middle of the head, and held in place by lashing through such a hole. A piece of this from the end was broken out through the eyelet with a square break at the middle of the hole. This might well have happened had it been used as an adze-handle. The other end, and part of the corresponding edge near it, were also broken off.

Wedges made of elk-antler and a few of bone were numerous here, as in the Fraser Delta.[1] We collected over forty wedges or fragments of wedges made of antler. They are usually made of the basal part of an elk-antler. Many of them are cut diagonally across, exposing the central cellular portion of the antler. The points of over thirty of these are cut almost wholly from one side, or more from one side than the other, but two or three are cut off symmetrically from both sides. Some are made from curved pieces of

[1] Compare p. 161 of this volume.

antler. These look almost exactly like a specimen from Lytton,[1] and cannot be mistaken for warped wedges. They are similar to the curved canoe wedges of the Indians. The objects vary in length from about 50 mm. to 210 mm., and many are somewhat smoothed from use. The upper ends of over thirty of them are chipped and crushed, showing the effect of the stone hammer. A few wedges made from tips of antlers were found. Most of these, although asymmetrical, were sharpened from both sides, giving them the form of chisels. Similar specimens were found in the Fraser Delta[2] and Thompson River region.[3] In some (for instance, $_{7}\frac{16}{245}$), the head has been bevelled off towards the circumference to prevent splitting of the bone.

Fig. 132 represents a wedge made of a portion of the wall of a large compact bone. The point is round and well formed. The base is much battered and fractured, due to the blows which it has received in being driven. A large portion of the surface is highly polished from wear.

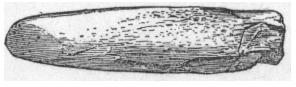

Fig. 132 ($_{7}\frac{16}{278}$). Bone Wedge. From shell-heap at North Saanich. $\frac{1}{2}$ nat. size.

Wedges made of antler are common in the Thompson River region[4] and in the Fraser Delta,[5] while they are scarce north of Saanich and south of Burton, where presumably wooden wedges were in common use. Possibly the antler wedge was one of the implements introduced on this part of the coast by the Salish in their migration westward.[6]

Six somewhat wedge-shaped implements made of bone may have been used also as chisels or daggers. Some are battered at the top. The cutting-edge is not always at a right angle to the axis (for instance, in $_{7}\frac{16}{269}$). Some have the cutting-edge at an angle, instead of square across the end.

A shell of *Hinnites giganteus* Gray ($_{7}\frac{16}{133}$) was found in Trench No. 1 in the shell-heap. The edge, except near the hinge, has been cut square across, and the convex surface has been smoothed off on its highest part. This may have been used as a spoon, as the modern Indians now use clam-shells; or it may have been cut as material for some such object as the ornament made of this species of shell, and shown in Fig. 138, *a*.

Fish-knives made of slate are numerous in the shell-heaps of this vicinity. In general, they do not differ from those of the Fraser Delta shell-heap.[7] The typical specimens are similar in form to those now used in this region. Most of these latter, however, are made of iron instead of slate, and many have bone or wooden handles. There are no traces of handles on the fish-knives made of slate found in our excavations here.

A large oblong specimen ($_{7}\frac{16}{197}$) was found.[8] It is 175 mm. long by 98 mm. wide. The edge is sharpened in the usual way, the sides show stria-

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[1] See Vol. I, Fig. 37, p. 141.
[2] See p. 161 of this volume.
[3] See Vol. I, p. 414.
[4] See Vol. I, pp. 141, 414.
[5] See p. 161 of this volume.
[6] See p. 190 of this volume.
[7] Compare pp. 159, 160, of this volume.
[8] Compare Fig. 25, p. 159 of this volume.

tions in various directions, and the ends and back are jagged. Fifteen fragments of such fish-knives were collected by us.

In Fig. 133, *a*, is shown a flat crescent-shaped piece of slate or fine sandstone of blackish color, 9 mm. thick by 189 mm. long. The corners are more or less rounded; and the long curved edge is partly sharpened, apparently to bring it into the form of the cutting-edge of a fish-knife. Striations, caused by grinding it into shape with a grindstone, show on many parts of the surface. Some natural fractures have not been entirely effaced.

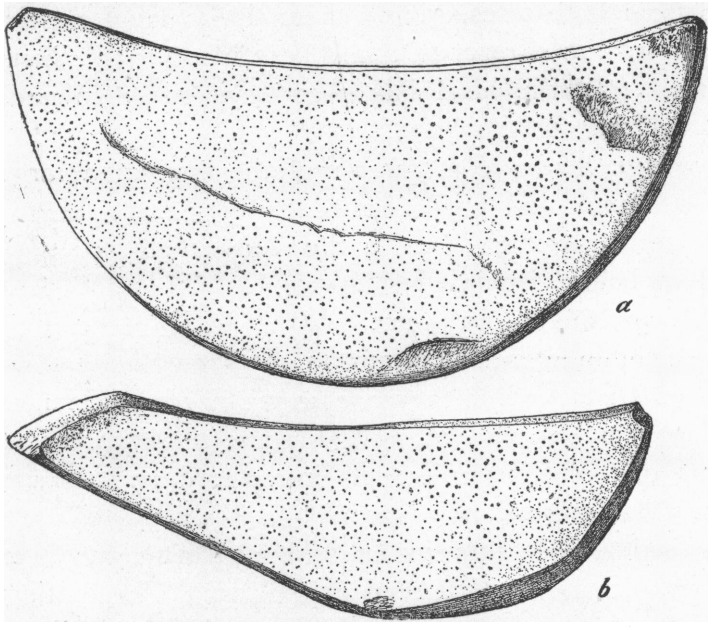

Fig. 133, *a* ($\frac{16}{5717}$), *b* ($\frac{16}{7198}$). Fish-Knives made of Slate. From shell-heaps at North Saanich. $\frac{1}{2}$ nat. size. *a*, Unfinished, from road-cut, collected and presented by Mr. J. Newbigging.

Fig. 133, *b*, represents a peculiar fish-knife made of a piece of slate 18 mm. thick at the handle, and 10 mm. thick at the blade. The handle is almost rectangular in section, but terminates in a point made by rounding off one end at a bevel from the upper edge to an acute point with the lower one. The lower or curved edge of the blade is sharpened by bevelling from both sides, but is rather blunt. The sides have apparently been used as a whetstone.

In Mr. J. Newbigging's collection, from the road-cut in the shell-heap near North Saanich, is a piece of slate or fine-grained sandstone, about 116 mm. long by 40 mm. wide, of rectangular form, about 9 mm. thick, and with rounded corners. It resembles a typical unfinished, unperforated gorget of the eastern United States. It may be an unsharpened fish-knife, a whetstone, or even a gorget. Gorgets have been found on Puget Sound, — one near Marietta, another near Burton.[1] One of the fragments above mentioned ($\frac{16}{7199}$) has a cutting-edge consisting of two nearly straight lines meeting at an obtuse angle, which has been rounded off. One specimen ($\frac{16}{7198}$), the somewhat lanceolate spear-point shown in Fig. 121, *c*, has a straight base. The sides are sharpened like a fish-knife.

The lateral half of the lower incisor of a beaver ($\frac{16}{7182}$), cut off longitudinally, was found 60 cm. deep in Trench No. 3. It was polished on the cut surface. This specimen, which thus shows artificial work, is a lower incisor.

[1] See Figs. 154 and 164.

It may have been used as a knife, but the end presents only the much-polished natural cutting-edge of the tooth; and possibly the object was intended for a die, such as are used by the modern Indians.

A large number of implements made of bone were found, some of which were probably used in the manufacture of garments, baskets, nets, mats, etc. Most of these are similar in form to objects of this kind from the shell-heaps of the region and from Fraser River previously figured and described.

Fig. 134 shows an interesting object made of antler. It is curved longitudinally, and the edges are much rounded. In the concave side a flat-bottomed groove has been cut to a depth of nearly half its thickness. Triangular holes are cut through this groove with a slight bevel from each side. In the convex surface there is a groove nearly as wide as the base of the upper triangle, extending from it to the end. On the convex side the edges of these perforations, especially of the one nearest the end of the implement, are worn, as if by loose lashings. The specimen is 4 mm. thick. It was found 1.5 metres deep in the shell-heap at North Saanich.

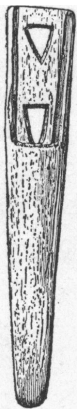

Fig. 134 ($\frac{16}{7117}$). Object made of Antler. ½ nat. size.

A thin lath-shaped piece of firm bone, with irregularly rounded ends ($\frac{16}{7118}$), was found 120 cm. deep in the shell-heap. It somewhat resembles a dull paper-cutter, and may have been a tool for basket-plaiting or a mesh-measure.

Few implements which are supposed to have served for the preparation of skins, and no needles, were seen, but many awls were found. Awls made of bone were numerous. In general, they are of the same types as those found in the Lower Fraser Valley, described and figured in Part IV of this volume.

Of awls made of the proximal part of the ulnæ of deer, we found five entire and two broken specimens, besides three of the bones which were evidently selected as material, if not actually somewhat used. Attention has been called to the occurrence of this type of awl in the Thompson River region and the Lower Fraser Valley, as well as to its wide distribution in America.[1] They vary in size and form of points. Bones of old and young animals were used in their manufacture. None were burned. By far the greater number of awls, about thirty, were mere splinters of bones of mammals or pieces cut out by longitudinal grooving and breaking, sharpened at the more acute end. Some have the articular end present, which would well serve as a handle.

One awl made of bird-bone ($\frac{16}{3723}$) was found in the shell-heap. It is a slender hollow bone, a radius or ulna, cut across diagonally, and somewhat polished, apparently by use. The base is broken off. It will be remembered that such awls made of bird-bones were found in the Lower Fraser region.[2]

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[1] See Vol. I, p. 420; also p. 170 of this volume.

[2] Compare Fig. 35, *d*, *e*, of this volume. See also Fig. 108; and Vol. I, Fig. 357, *c*, p. 420.

One object made of the distal end of the metapodial bone of an ungulate may have been an awl, where half of the distal articulation remains and forms a convenient handle. This type of awl is also found in the Thompson River region and the Lower Fraser Valley, and is widely distributed in America.[1]

A splinter from the wall of a long bone ($_{7}\frac{16}{140}$) was found. The sharp edges of this are somewhat smoothed, apparently by wear; and at the acute top is a notch cut from one edge and from the inside, leaving a thin knob consisting of the outer layer of the bone. This may have served to hold a string by attachment around the notch, or the notch may have been made in order to break the bone.

Two tubes made of bones of birds ($_{5}\frac{16}{775}$ and $_{7}\frac{16}{467}$) were found in the shell-heap. There are a number of incised cross-lines on the latter, one near the larger end extending nearly around. There are also a number of crosses. The right innominate bone of a seal ($_{7}\frac{16}{262}$) was also found in the shell-heap. Most of the ilium, the rim of the socket, and the margin of the rear end of the pubis, are trimmed off.

Two bone objects, somewhat similar to one found at Kamloops and shown in Fig. 376 of Vol. I, were found. The first is illustrated in Fig. 135. It is an object[2] cut from a thin piece of bone. It is narrow, and the sides taper to a point at each end. These points are bent back like a bow, the edges are rounded, and the whole surface is smoothed by wear and disintegration. The concave side bears both longitudinal and transverse striations, and near the middle of the convex surface are several incised scratches which extend across. It was found 1.35 metres deep in the shell-heap at North Saanich. The specimen found at Kamloops also bears an incised design. The second ($_{7}\frac{16}{151}$) was found 15 cm. deep in the shell-heap. It is of a similar form, but the edges are rather sharp and one end is broken off.

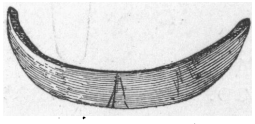

Fig. 135 ($_{7}\frac{16}{120}$). Bone Object. $\frac{1}{2}$ nat. size.

In warfare many of the implements that were used for hunting, and perhaps others that may have been used as tools, were undoubtedly employed. The chipped and ground points for spears, arrows, knives,[3] and similar weapons, which have been previously described, certainly served either purpose. However, a number of special implements have been found which were probably useful only in war, or perhaps ceremonially for killing slaves.[4]

Fig. 136 shows a dagger made of the proximal end of a metatarsal bone of an elk. The bone has been cut longitudinally. The anterior inter-metapodial groove shows on the convex side along the greater part of its length, and has been deepened part way by longitudinal incising. The smoothing of the convex surface of the object has sharpened almost the entire margin of

[1] See Vol. I, pp. 148, 420; also p. 171 of this volume.
[2] Mentioned in Vol. I, p. 430.
[3] See also p. 332.
[4] See Fig. 178.

the groove, otherwise this side of the bone is but little changed from its natural form. The base is slightly tapered from both edges and sides, so that it is somewhat wedge-shaped or squared like a tang, which suggests that it might have been inserted in a dagger-handle or have been used as a spear-point. Similar specimens have been found at Dungeness, Burton, and Damon, Wash. Another specimen ($_{7}\frac{16}{144}$), found 1.35 metres deep in the shell-heap, is a less acute point broken from a similar object, which was sharpened by a bevel on each edge of the convex side.

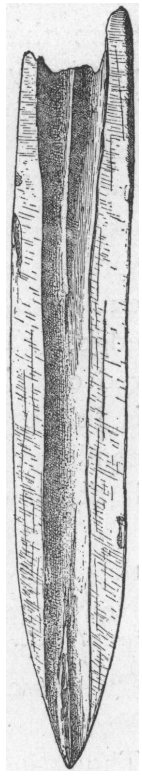

Fig. 136 ($_{7}\frac{16}{127}$). Bone Dagger. From road-cut, North Saanich. Collected and presented by Mr. J. Newbigging. $\frac{1}{2}$ nat. size.

Two fragments of clubs made of bone of whale were found (Fig. 137). The first fragment (*a*) seems to be the complete blade, which is thicker at one edge than at the other, and in this respect somewhat resembles a knife-blade. The end is blunt, and is the widest portion of the somewhat paddle-shaped blade. The surface is crudely wrought and shows a number of hack-marks. It is 15 mm. thick along the longest and thickest edge, and 5 mm. thick at the other. The second fragment has a short paddle-shaped blade; and the handle, which in section is roughly oval or rectangular with rounded corners, is broken off at the tip. The bone cells at this place have been compressed longitudinally and distorted laterally, as if from having been battered. The surface is somewhat smooth, due to disintegration. Hack-marks show on the edges of the handle and on some portions of the blade.

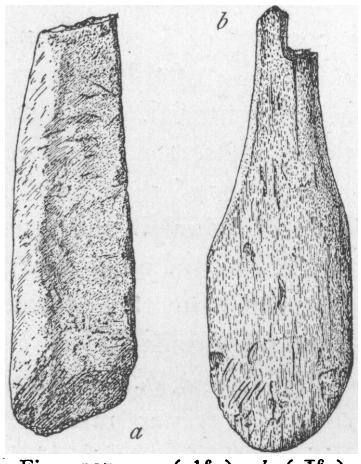

Fig. 137, *a* ($_{72}\frac{16}{58}$), *b* ($_{72}\frac{16}{57}$). Fragments of Bone Clubs. From shell-heap, North Saanich. $\frac{1}{4}$ nat. size.

Three objects supposed to be personal ornaments were found.[1] Fig. 138, *a*, represents a pendant which is made of part of a patelloid shell, probably *Hinnites giganteus* Gray. It is of the shape of a crescent, with blunt or rounded corners, the shape probably being due to the natural form of the shell; and it is perforated near the middle of the convex side, which is thin and rounded over its almost sharp edge. This perforation is drilled, tapering from both sides, but is largest on the concave side. The concave edge is thick. The specimen is polished on all surfaces; and before it became disintegrated the iridescent nature of the shell, together with its beautiful purple color, must have made it a rather pretty ornament. It was probably worn suspended over the chest or from an ear, but possibly may have been a hair-ornament.

[1] See also the copper object described on p. 65 of this volume.

Fig. 138, *b*, shows a labret made of stone. The top is oval or somewhat elliptical in outline, the exact contour of which cannot be determined because the ends are broken. The edges are quite thin and round. It curves symmetrically downward from each end. The plug of the labret is oval in section. It flares out slightly, and curves inward at the base. The bottom is deeply concave. The entire surface is highly polished, which may explain the rounded condition of the edges. The material is of a mottled-red color, although where the specimen is broken it shows a black interior. This peculiarity, as well as the crackled condition of the broken surfaces, may be due to the effect of burning. It is light in weight, and is made of a clay shale.

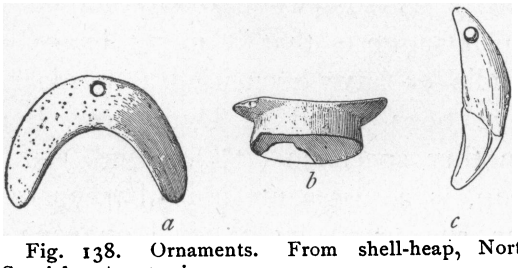

Fig. 138. Ornaments. From shell-heap, North-Saanich. ½ nat. size.
a ($\frac{16}{11}$), Pendant made of shell, found 1.3 m. deep; *b* ($\frac{16}{11}$), Stone labret; *c*, Wolf-tooth pendant (from a sketch by the author, of the original in the collection of Mr. J. Newbigging).

The canine tooth of a wolf (Fig. 138 *c*), perforated through the base of the root by a hole drilled from each side as usual, was seen in Mr. J. Newbigging's collection from the road-cut in the shell-heap near North Saanich. This was probably used as a pendant for the ear or neck.

Several pipes made of steatitic rock have been found in the vicinity of North Saanich. These resemble in material and form the pipes of the Thompson River area and the Lower Fraser Valley. This type of pipe occurs in the region from Saanich to Kamloops, from Kamloops southward on the plateau as far as the Columbia Valley at Umatilla,[1] and the general type is found continuing on southward in the plateau country of Oregon and California, but each region apparently has its own special type of this general form and material. In view of these facts, the presence of this type of pipe in the vicinity of Saanich suggests influence on the artifacts of this section from the interior by way of Fraser River.

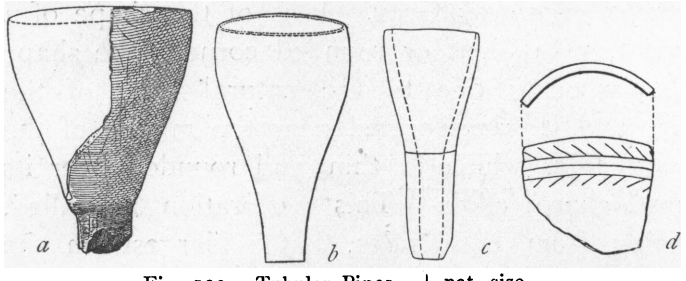

Fig. 139. Tubular Pipes. ½ nat. size.
a ($\frac{16}{12}$), From North Saanich; *b*, From Sidney (from a sketch by the author, of the original in the collection of Dr. C. F. Newcombe); *c*, From Fulford Harbor (from a sketch of specimen in the collection of Lieut. G. Pike); *d*, From Point Damon, Wash. (from a sketch by the author, of the original in the collection of Mr. George H. Damon).

Fig. 139, *a*, *b*, illustrates two tubular pipes made of steatitic rock from the shell-heaps of the Saanich Peninsula. The first is of dark-green steatite. The stem is broken diagonally off, and about two-thirds of

[1] Compare Vol. I, Figs. 103-105, p. 154; Fig. 111, p. 157; Fig. 374, p. 429; and pp. 180, 181, 184, 185, of this volume. See also American Anthropologist, N.S., 1906, Vol. VIII, pp. 34-37.

the bowl is missing. Around the broken end of the stem an incision had been made, from which the projecting portion had been broken off across the perforation in an endeavor to square the end of the pipe. The remaining part of the broken, bevelled surface is somewhat smoothed; and the stem seems to have been whittled since the bowl was polished. Possibly these things were done in an attempt to fit the broken stem into a tube, and thus restore the pipe. The perforation in the tube is ovoid in cross-section, and excentric. The bowl is of the shape of a wineglass, and, although somewhat polished on the outside, still shows longitudinal striations on both outside and inside. The edge is thin, square across, and blackened by use. The second is a beautifully formed specimen of the shape of a cigar-holder, and is made of steatite. Both ends are cut square across. There is no demarcation between the bowl and the stem, which merge gradually into each other. It was found by Mr. Louis Herber in the shell-heap at Slagwelnnotth, on his farm near Sidney.

Fig. 139, *c*, illustrates a tubular pipe, mentioned on p. 181 of this volume, made of black steatite. According to Dr. C. F. Newcombe, it was found in 1901 by Lieut. G. Pike of H. M. S. "Virago," R. N., on the village site at Fulford Harbor. There is an incised line around the middle, marking the place where the bowl joins the stem.

A wedge-shaped pipe-bowl of square or hexagonal section from the vicinity of Saanich (Provincial Museum at Victoria, Cat. No. 193), was collected and presented by Mr. A. Anderson, who states that it was made to order.

An object, shown in Fig. 139, *d*, that appears to be a fragment of the rim of a pipe-bowl made of soft fine-grained brown gritstone which closely resembles fine-grained pottery, found on Point Damon, was seen in Mr. Damon's collection. It is about 3 mm. thick near the rim, and gradually thickens a little towards the other edge. If the curve of the entire rim were in keeping with that of this fragment, the bowl would have been about 40 mm. in diameter, which seems almost too large for a pipe-bowl having such thin walls, although some of the tubular pipes made of steatite are as thin. However, so far as I am aware, pipes of this form or material have not been found south of Sidney. The outside is decorated with an incised design.

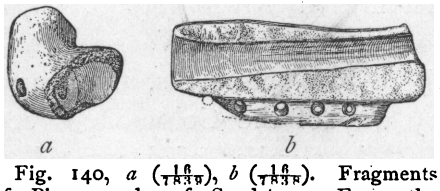

Fig. 140, *a* ($\frac{1}{1}\frac{6}{8}\frac{6}{3}\frac{6}{5}$), *b* ($\frac{1}{1}\frac{6}{8}\frac{6}{3}\frac{6}{5}$). Fragments of Pipes made of Sandstone. From the shell-heap near Markham, Wash. Collected by Mr. Edmond Croft. $\frac{1}{2}$ nat. size.

The two fragmentary pipes shown in Fig. 140 are made of fine-grained sandstone of a gray color. Both, apparently, have come from the river-bank, since the roughness and the sharp corners, which were caused by fracture, have been worn smooth. There are slight indications of peck-marks on both specimens.

One fragment (*a*) has both ends broken off. It is circular in section

and curved, the angle between the bowl and the stem being slightly greater than a right angle. The bowl has been gouged out, and shows tool-marks. It narrows to a flat bottom, near the middle of which a small drilled bore tapers down and meets a similar one from the socket in the stem. This socket, undoubtedly made to receive a wooden stem, was drilled out, and, like the bowl, has a flat bottom, from which a small hole extends to meet the other bore. Some difficulty was evidently encountered in drilling this, since at a depth of about 3 mm. from the base of the socket it suddenly becomes smaller, and it has been drilled beyond the tube from the bowl until it broke out at the elbow.

The other fragment (*b*) is a side of the stem broken off with just a bit of the base of the bowl. The stem was circular in section, with a ventral mid-rib about 5 mm. thick, of rectangular form, but with corners rounded. This extends from the mouth of the stem nearly to the base of the bowl, the end towards the mouth-piece being cut off by the continuation of the broken surface of the fragment. Close to its base are four holes, each drilled tapering from both sides, as usual. The break at the end passes through a fifth perforation. The five holes, which were about equidistant from each other and from the ends of the rib, were probably for the attachment of feathers or other decorations. The bore in this stem shows longitudinal and lateral marks sufficient to indicate that at least the finishing-process consisted of both gouging and whittling. At the end the stem was cut square across, but now it is rounded from wear. Here the bore flares out, apparently for the reception of a wooden stem.

Pipes like these, so far as I am aware, have not been found on the coast north of here, where, at least in the neighborhood of both Port Hammond and North Saanich, the tubular form is found. They are seen, however, among those now used by the Thompson River Indians of the southern interior of British Columbia[1] and in the interior of Washington. I believe that this style of pipe came recently from a southeasterly direction into the Thompson River region, where the tubular pipe was the ancient form, and to the coast of Washington from the same region. Indeed, in the case of these two specimens, they may have been brought here by travelling Indians by way of the Columbia River, and not by way of the Fraser River.

A number of decorated objects were found, sufficient to give an insight into the characteristics of the style of art of the prehistoric people of this vicinity. Their art, like that of the Lower Fraser Valley,[2] differs from that of the North Pacific coast proper in the greater number of geometric designs. The parallel lines forming geometric designs on the harpoon-points shown in Fig. 141 are quite different from any motives applied by the present inhabitants of the North Pacific coast. They resemble decidedly designs used by the

[1] See Vol. I, Figs. 271 (p. 301) and 306 (p. 382).

[2] Compare p. 181 of this volume.

Indians of the Thompson River region, particularly some of the designs on prehistoric objects,[1] and they also resemble the art of the prehistoric village sites of the Lower Fraser Valley.[2]

In Fig. 141, *a*, is represented a harpoon-point with characteristic decoration consisting of checker-work made by hachure. There is another harpoon-point with incised design ($\frac{16}{7194}$), which, so far as visible, consists of four horizontal bands made of vertical hachure between horizontal incisions. These bands extend from the barb undercut across the side, back, and opposite side, to the corresponding undercut. Still another fragment of a similar point ($\frac{16}{7193}$) was also found with these. The design resembles that on the first specimen, except that the hachured checks below the lower barb correspond to the open checks on the first specimen, and *vice versa*.

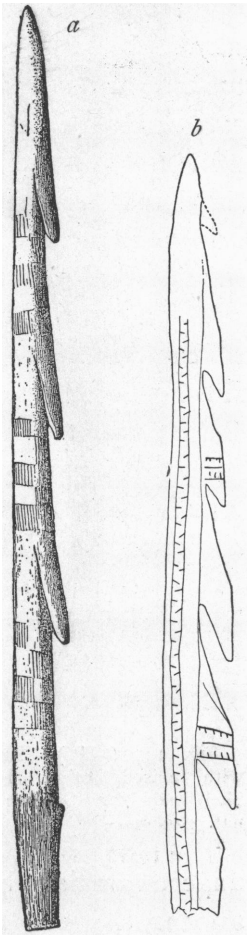

Fig. 141. Decorated Harpoon-Points. From North Saanich. ½ nat. size. *a* ($\frac{16}{7192}$), Found 2 metres deep; *b*, From a sketch by the author, of the original in the collection of Mr. J. Newbigging.

A fragment of a soft clay-stone pebble, oval in section, rounded at one end and broken off at the other, 25 mm. by 30 mm. in diameter and 73 mm. long ($\frac{16}{7146}$), was found 60 cm. deep in the shell-heap. Its surface bears longitudinal incisions and cross-incisions, which appear to have extended around it, dividing the surface into checks, but which are partly effaced by erosion or wear. The barbed harpoon represented in Fig. 141, *b*, is decorated with an incised-line design.

A different technique is used in the decorations on the bowl shown in Fig. 142, the geometric designs being in intaglio, like those on the pieces of antler from the Lower Fraser Valley shown in Figs. 146, *b* and *c*, of this volume. All the remaining objects and the incised piece of antler shown in Fig. 143 represent animal forms. These will be discussed later on.

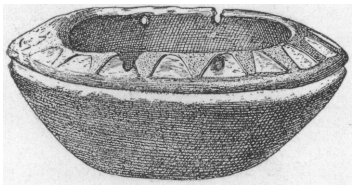

Fig. 142. Steatite Dish. From North Saanich. (From photographs of the original in the collection of Mr. Alexander McDonald.) ½ nat. size.

Fig. 144 illustrates a fragment of a sculpture in black slate, which is worn on the corners, apparently by the surf. The material closely resembles the black slate of Queen Charlotte Islands. The sculpture represents a human face, with a peculiar figure in front of it, and arcs of two concentric circles which are marked by ridges touching each other at their bases. On the upper portion of the fragment, outside of these arcs, may be seen a raised segment, apparently a portion of a series of scallops tangent to the arcs. The arcs

[1] Compare Vol. I, passim.

[2] Compare Figs. 49 (p. 181), 50-53 *a* (pp. 181-184), of this volume.

and segment, together with this particular sort of slate, suggest that the fragment is a piece of a plate such as those recently made by the Haida. The figure in front of the face suggests a plant-form; but, as such a motive is foreign to the art of the Northwest coast, it seems improbable that the figure represents such an object. The face does not seem to be purely of the primitive art of the coast, although the eye and the general character of the carving correspond to that art more closely than to the sculpture of any other region with which I am familiar. The incisions on the top of the head apparently represent the hair, or a turban similar to that at present commonly made of a handkerchief and worn by the women of this region.

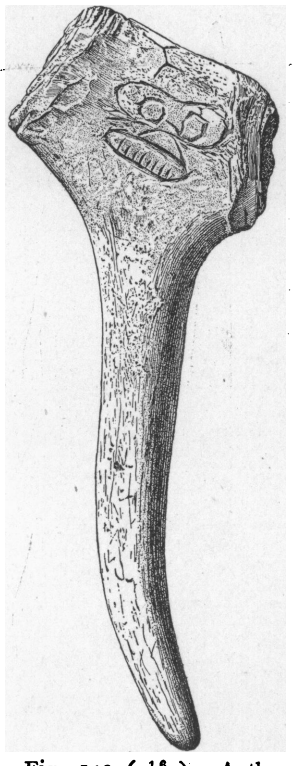

Fig. 143 ($\frac{16}{7201}$). Antler with Incised Design. From Shell heap North Saanich. $\frac{1}{2}$ nat. size.

On the Saanich Peninsula the chief method of burial was in stone cairns, and these sepulchres have been described on pp. 57 and 63-67 of this volume. The usual method was to flex the body, place it on one side on the ground or in a shallow hole, unaccompanied by objects, surround it by several large bowlders, forming a rude box, cover this box first with one or more large bowlders, and finally with a rough pile of smaller irregular rocks. In some instances earth was put over the cairn so as to form a small mound. However, a few human skeletons were found in the shell-heaps. These also were unaccompanied by artifacts. None of the skeletons appear to have been intrusively buried. Some stray bones and even a stray skull occurred. Perhaps the bodies had been buried in cairns the stones of which were afterwards removed. Fragments of human bones, and some whole bones of children, were found scattered in the shell material.

Fig. 144 ($\frac{16}{5120}$). Fragment of Slate Sculpture. From North Saanich. Collected and presented by Mr. J. Newbigging. Nat. size.

Many of the skulls from the cairns were artificially deformed in a manner similar to that practised by the Indians of the northern part of Puget Sound and the southern part of the Gulf of Georgia. The amount of deformation is, however, not quite so strong as found in some cases among the more modern Indians. Some of the skulls found in the shell-heap were of a narrow type, resembling those found at Eburne,[1] and they were rather deep in the heap, and never found among the upper or more recent layers.

[1] Compare p. 189 of this volume.

DETAILED ACCOUNT OF SKELETONS FOUND ON THE SAANICH PENINSULA, BUT NOT IN CAIRNS, DISCOVERED IN 1899.

No. 24. In shell-heap south-southeast of the North Saanich Post-Office. 75 cm. deep in black loam slightly mixed with shell. Skull and bones broken, but only slightly decomposed.

No. 31. In shell-heap at North Saanich. Stray skull.

Nos. 32 and 33. In shell-heap southeast of the North Saanich Post-Office. 1.20 metres deep. The bones of these two skeletons were intermingled. See also No. 35.

No. 34. In shell-heap southeast of North Saanich Post-Office. 1.65 metres deep. Narrow skull. See also No. 35.

No. 35. In shell-heap. 1.65 metres deep in clam and earth. Skull north, face west, flexed. Narrow skull. See also No. 34. Four points ($\frac{16}{7191}$-$\frac{16}{7194}$) were found within one foot of this skeleton, but not with it.

No. 36. In shell-heap. Bowlders surrounding bones, cover of flat stones. 20 cm. deep. Skull north, face west, flexed.

No. 37. On spit of James Island off the Sidney Sand-Spit, where there are many skeletons. 35 cm. deep. Skull northwest, face down, flexed. Stones near the skeleton under the sand, as if forming a cairn with no cover-stones.

No. 38. Similar to No. 37.

No. 39. Stray bones with no stones near them.

The general style of many of the artifacts, such as arrow-points chipped from stone, points made of bone and antler, pipes made of steatite; geometric designs, and designs made in intaglio; the finding of skeletons in these heaps; and the fact that some of the skulls seem to be of the same type as the narrow ones found at Eburne, — give the general impression that the prehistoric people of this vicinity and those of the Lower Fraser Valley were at least in close contact with each other, closely related or possibly identical. It will be noted that the skulls of the narrow type found here were deep in the shell-heap, suggesting at least that the people having skulls of the narrow type were the older in the whole region. Evidently in this region a peculiar type of culture existed. The significance of this fact will be discussed more fully in the conclusion of this paper.

VICTORIA.

Along the coast, near Victoria,[1] are shell-heaps, which, taken together, extend for miles, and are from 30 cm. to more than a metre high.

Following the north side of the Gorge (Portage Inlet) from the Gorge Bridge to the Craigflower Bridge, a distance of more than a mile, there is an almost continuons shell-ridge. This is composed largely of pure shell material, of which in places more than half is of the oyster. In both these respects it differs from the heaps of the Lower Fraser River.

Back about 60 metres from the beach, and north of the school-house, we dug to a depth of 3 metres into a ridge composed of black earth and ashes,

[1] See map opposite p. 56 of this volume. The cairns of this vicinity are shown on Plates I, II, IV, and V, and on the map just referred to, and are described on pp. 56, 58-60, and 67-74, all of this volume.

with a little shell, finding only one artifact, although many implements have been found in the general vicinity of Victoria. The school-children stated that two skeletons had been found in the edge of the road, somewhat nearer to the water.

Mr. Oregon C. Hastings made explorations near Victoria, on which he reports as follows: —

> At MacCauley's Point there is an embankment and a ditch, as also at Cadboro Bay and Oak Bay. In fact, I think they can be found all along the eastern side of Vancouver Island. Wherever cairns occur, these embankments and trenches may be expected. The oldest Hudson Bay men say that these were here when they came.
>
> On the eastern side of Beacon Hill [1] there is an embankment across the base of the point, which makes out into the water, curving convexly through the point, and making the enclosure on it as large as possible. A ditch about 60 metres long accompanies it, which has been, I should say, about 2 metres deep. The earth from this ditch was thrown up towards the point, forming the embankment. Between the ditch and Beacon Hill there was at one time a grove of trees, and a little hollow in which water was to be found. This water-hole had been turned into the ditch. The bank of the point is about 15 metres high, but not so steep that it cannot be climbed.
>
> There is also one of these embankments on the western side of Beacon Hill, which, if I remember rightly, is much longer, and forms not so much of a semicircle, but encloses a larger area, and has a ditch of about the same depth. This place is also near water.

According to the late James Richardson, there is a trench across the base of Finlayson Point, southeast from Beacon Hill, not far from the line of the race-course.[2] According to the same authority, there are two mounds about 160 metres southeastward from the top of Beacon Hill within the race-course (one of these lies southwesterly from the other), also four cairns from 1 metre to 60 metres north of the top of Beacon Hill.

There is a trench which cuts off the north end of the little point projecting into Cadboro Bay a little to the southeast of the slaughter-house, on land belonging to the Hudson Bay Company, and about a quarter of a mile due east of the cairns situated about four miles northeast of Victoria on the same farm.[3] On the point cut off by the trench we found traces of house sites, and on both the east and west side of the point were small shell-heaps. Two skeletons covered with a few stones were found near the end of the point. South of this trench, close to the beach, on the south end of a little point, were a few small cairn-like structures.[3] To the southeast of these, between them and a little island in a very small bay, was a hole, apparently the remains of a comparatively recent cooking-place. Along the shore at the head of this bay was a shell-heap; and on the island were found deposited in boxes a number of human skeletons in the last stages of decay. Between the shell-heap at the head of this bay and the head of the other bay, to the west of the point cut off by the trench, beginning 8 metres west of the

[1] Referred to by Bancroft, Native Races of the Pacific States, Vol. IV, p. 740.

[2] This information is given on the authority of a tracing furnished by the late Dr. George M. Dawson from Mr. Richardson's note-book No. 49, pp. 8, 9.

[3] See p. 58 of this volume.

trench, and in the forest near by, were ridges and heaps overgrown with vegetation, but which apparently marked ancient habitations, or fortifications connected with the numerous house sites, shell-heaps, and burial-places in this immediate vicinity. Northwest from here, along the western side of the little bay, between the slaughter-house and the point cut off by the trench, was a shell-heap about a metre in height, into which the surf has so cut that a vertical section of it is exposed to view. Artifacts were not frequently seen in this section or on the beach below it, although a large amount of shell material was thus examined. Beginning at the southern end of this shell-heap, and circling to the west and then to the north, was a small creek which farther up had been artificially formed into a moat, with a ridge of earth bounding it on the north and east. This trench and embankment were evidently the fortifications of the house from which came the material making up this shell-heap. There are numerous other shell-heaps, and according to Dr. C. F. Newcombe an earth-work, along the shore of Cadboro Bay to the northeast of here, which we did not examine. Going southward along the shore, one frequently encounters shell-heaps of various sizes. Shell-heaps were found on the Bowker Farm at Oak Bay, about a mile north of Oak Bay Hotel; and a quarter of a mile north of these were others. Dr. Newcombe informs me that there is an earth-work on the Stewart Farm at Esquimalt. Shell-heap material also occurs in the talus slope of Beacon Hill.

The shells found in the shell-heaps near Victoria include those of *Tresus nuttalli* Conrad, *Saxidomus nuttalli* Conrad and *Tapes staminea* Conrad, *Macoma nasuta* Conrad, *Mytilus edulis* Linnæus, and *Ostrea lurida* Carpenter. A fragment of a shell of *Pecten caurinus* Gould ($\frac{16}{3290}$) was found. Bones of mammals, and fragments of antler, were found. Some of the large long bones were split, possibly in extracting the marrow, or to make them of suitable size and shape for material out of which to make implements. Burned earth, ashes and burned shells, charcoal and charred bones, were also found. A fragment of copper, apparently a portion of a disk with a large hole through the centre ($\frac{16}{3288}$), was found at the shell-heap on Mr. Bowker's farm at Oak Bay, which was being cultivated by Chinese gardeners. The piece resembles sheet-copper; and since it comes from a collection made on the surface, and judging from the general digging in this shell-heap, it may be of European origin.

A fragment of trap ($\frac{16}{3280}$) was found at the same shell-heap. A long piece of chalcedony ($\frac{16}{5700}$) found on the surface at the same place has the bulb of percussion at one end, a single flaked surface on one side, and one long edge chipped like a scraper. These two are the only specimens of typical chipped stone work found by us near Victoria.

A point rubbed out of slate, 75 mm. long ($\frac{16}{3313}$), was found on the north side of the Gorge, or Portage Inlet, near Victoria, while digging in the shell-

heap, which is 3 metres deep at that place. The point is oval in section; in outline it is somewhat leaf-shaped. The tip of the base is slightly thinner than the middle of the object; the point is sharpened on each side of each edge.

Five points rubbed out of bone were found on or in the shell-heap on the Bowker Farm, all of them being made from fragments of long bones. Two ($\frac{16}{3285}$ and $\frac{16}{5696}$) are fragmentary. These two pieces of bone are rounded somewhat at the edges, and the points are nearly circular in section. One entire point found on the surface at the same place ($\frac{16}{5695}$) is merely a splinter of bone, somewhat rectangular in section, slightly rounded at the edges of the shaft, and pointed at both ends. The point of the large end is slightly oblique. It may have been used as a barb for a halibut-hook. Another piece ($\frac{16}{5699}$), a fragment, has been repointed where it was broken off, apparently near its base. It has been sliced off on either side of the lower end with a slightly concave surface, so that the base is as thin as any specimen of this size that I have seen. The tip of the shaft was the widest part of the specimen. Another point ($\frac{16}{5694}$), also found at the same place, is made out of a splinter of bone; the base is nearly oval in section, and was the largest part of the object, but it has been reduced in size by cutting one edge off almost parallel with the opposite side of the shaft. This bevelled surface somewhat resembles that portion of the specimen shown in Fig. 122, *c*, and still more the specimen $\frac{16}{5588}$ (p. 148 of this volume) and that shown in Fig. 336, *h*, of Vol. I. It would seem that the surface may have been thus bevelled to fit the point to something else, possibly as a barb for a halibut-hook.

Two fragments of bone, both found at the shell-heap on the Bowker Farm, are parts of barbed harpoon-points. One ($\frac{16}{5697}$) found on the surface was barbed by cutting notches in the sharpened side edge of the object, the end undercutting the barb being nearly at right angles to the shaft, and the other part of the notch extending down to the point of the following barb. The other specimen ($\frac{16}{3286}$) is similar, except that the notch undercuts the barb at an angle of about 45°, and is continued by a slight groove on each side of the shaft.

A stone sinker ($\frac{16}{5685}$) found at the shell-heap on the Bowker Farm is practically the same as the one shown in Fig. 22, *b*, of this volume. It is circular in outline, oval in cross-section, with a perforation near its centre. It was made from a fragment of water-worn sandstone, which was battered and chipped around part of its edge, apparently to bring it to a circular form.

Fig. 145 illustrates an anchor made of sandstone, from 90 mm. to 100 mm. thick. The side is rubbed, as if the object had been used as a hand-mill or as a grindstone on which to sharpen tools. It may have been used to anchor fishing-tackle, or even a canoe, in still water.

An oval pebble, somewhat flattened, but still convex on each side ($\frac{16}{3301}$), was found on the surface of the shell-heap about 8 metres west of the west

end of the moat, at the village site southeast of the slaughter-house near Victoria. It was probably used as an anvil. Three slabs of sandstone rubbed on both sides, but much more on one side than on the other, were found in the vicinity of Victoria. Apparently they are too large to be considered as whetstones, and were probably used as hand-mills or flat mortars.

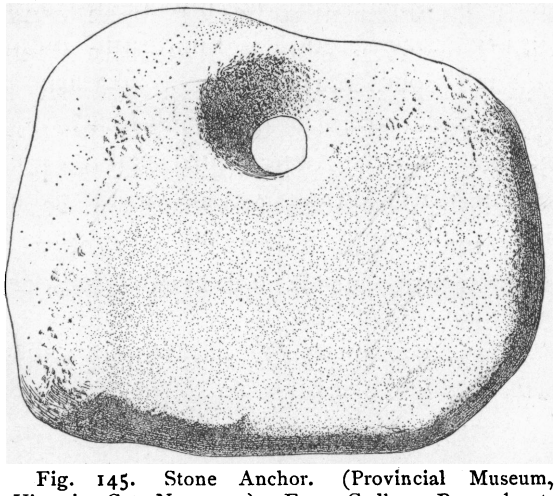

Fig. 145. Stone Anchor. (Provincial Museum, Victoria, Cat. No. 1047). From Cadboro Bay. $\frac{1}{4}$ nat. size.

Fragments of four pestles were found at the shell-heap on Mr. Bowker's farm, — two of them tops, and two striking-heads. The first top ($_{5}\frac{16}{68}{}_{3}$) is made from a tough greenish-gray stone. It is slightly convex, and there is a short striking-head slightly larger where it meets the body than at the end. The body gradually expands toward the base. The second specimen ($_{3}\frac{16}{27}{}_{3}$) is broken. Apparently its top was rudely made, but was hat-shaped, having a rather flat brim and sharp nipple. The edges of this knob are somewhat rounded, and the body expands gradually toward the base. The two disk-shaped striking-heads $_{3}\frac{16}{27}{}_{4}$ and $_{3}\frac{16}{27}{}_{5}$ are made of a tough grayish rock. Both have convex faces, the first being somewhat oval in cross-section, and having rather straight sides. The second is grooved around the circumference of the striking-head.

One fragment of the edge of a fish-knife made of slate ($_{3}\frac{16}{3}{}_{2}$), rubbed somewhat smooth on both sides and sharpened from both sides, but very much more from one side than from the other, was found among shell-heap material in the talus slope of Beacon Hill. — Burned and crackled pebbles ($_{3}\frac{16}{27}{}_{7}$) used for cooking, were found at the shell-heap on Mr. Bowker's farm. — An oblong pebble, oval in section (cast No. $_{9}\frac{16}{38}{}_{1}$), with a large, rather deep, circular pit on each side, notched by battering on each side-edge, and battered on the end, was found, about 1891, by the sons of Dr. C. F. Newcombe opposite an old village site at Esquimalt.

Seventeen wedges made of antler were found in the vicinity of Victoria. Nine are battered as if they had been driven. The others are broken off at the top. All of them have been sharpened by slicing off the convex side. They vary from 65 mm. to 203 mm. in length. — Tips of antlers, cut, hacked, and grooved for splitting in two, were found. Some were tools in process of manufacture; others, broken tools.

Three celts were found, the first ($_{3}\frac{16}{27}{}_{9}$) at the shell-heap on Mr. Bowker's farm. This specimen is 52 mm. long and 51 mm. wide. It is made of dark-green serpentine, and is sharpened to a nearly straight edge from each

side, but by a somewhat longer bevel from one side than from the other. The bevels are only slightly convex, and meet at an angle of about 60°. The next specimen ($\frac{16}{93}$) is oval in section. The poll[1] is somewhat wedge-shaped, apparently having been made from a pebble of that shape. The slightly convex edge is bilaterally symmetrical. It is shaped by slightly convex bevels. The material is a grayish serpentine, and the specimen was found on the surface of the shell-heap about a quarter of a mile north of the Bowker Farm. The third celt ($\frac{16}{666}$) is somewhat oval in section, sharpened by slightly convex bevels from each side to a nearly straight cutting-edge. The material is a grayish serpentine, somewhat blue in places, and green in other parts. It is 93 mm. long, and was found at the shell-heap on Mr. Bowker's farm.

Twelve whetstones and some splinters of bone found near Victoria give no occasion for remark, since they do not differ from those previously described.

Fig. 146 illustrates a saddle-shaped mat-smoother, made of a soft black stone, apparently slate. The flat base is grooved in a manner similar to the modern wooden implements used for pressing down the cat-tail stalks over the long wooden needles used in stitching them into mats. The raised ends on many of the modern objects are carved to represent heads of animals. This specimen is the only one made of stone which has come to our notice.

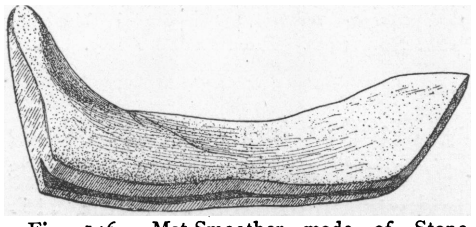

Fig. 146. Mat-Smoother made of Stone. From Cadboro Bay. (From a drawing by E. H. Woods; Provincial Museum, Victoria, Cat. No. 474.) ½ nat. size.

Other specimens from the vicinity of Victoria may be seen in Figs. 165, *g*; 167, *b*, *i*; 168, *i*, *g*; and 187, *a*.

Metchosen District and Rocky Point.

In Metchosen, at Witty's, many artifacts have been found on the sand-spit, also many skeletons. Cairns are numerous,[2] and a very large and well-shaped one is situated in the woods, in a basin subject to overflow at high tide. Many pits are found throughout Metchosen. It is said that cairns are found on the adjoining hills. At Pedder Bay many relics have been found, and a Mr. Reid has or had a collection found in caves. Dr. C. F. Newcombe informs me that there is an earth-work at Metchosen.

Near Rocky Point, but about half a mile back in the forest from the beach, Mr. Albert A. Argyle discovered, in the year 1904, a number of pits from 2 metres to 3 metres long, about 1 metre wide, and 1 metre deep. Around about half of two of these pits was a ridge of earth, and the bottom of each was paved with pebbles or round stones which were about 25 cm.

[1] The poll of an axe-blade is the portion towards the butt-end of the blade.

[2] Cf. p. 58 of this volume.

long by 10 cm. wide, although not uniform in size. Mr. Argyle was of the opinion that these may be the remains of pitfalls made for trapping deer. It seems also possible that they may have been places for cooking roots. He reports that cairns abound, but he has not found skeletons in any of them. A specimen from this vicinity is illustrated in Fig. 191, *a*.

Burrard Inlet and Vicinity.

There is a shell-heap on Point Grief, near Moodieville, or about eighty miles north of the mouth of Burrard Inlet; another[1] at the head of the inlet, not far from the Canadian Pacific Railway; and another[2] on the southern side of the mouth of the inlet, in Stanley Park, in the western part of Vancouver. In this general region, according to Mr. Hill-Tout,[1] several caches of inchoate chipped forms have been found. These objects were made of what he calls "a dark argillaceous bowlder of crystalline character or bowlders of dark-gray basalt." There is a shell-heap[2] at the head of False Creek, in the eastern part of Vancouver. Specimens from Burrard Inlet are illustrated in Figs. 181 *a* and 187 *b*.

A shell-heap is located on the right side, going up Stave River, a mile and a half above its mouth. The point is immediately below the beginning of the first canyon. Our information on this shell-heap is based upon the report of Mr. Albert A. Argyle, who assisted me in my archæological expeditions.

Burial-mounds at Hatzic and Port Hammond have been fully described before.[3] The shell-heaps at Port Hammond and near Eburne are shown on the map opposite p. 56, and have been described in Part IV of this volume.[4]

At Maple Ridge, above Kanaka Creek, near the Fraser River, is another shell-heap, also reported by Mr. Argyle.

Point Gray and Boundary Bay.

Shell-heaps are found on the northern shores of Point Gray toward Vancouver, along the coast on the southern shore of Point Gray, and at the back of the present Indian village of Musquiam, at the mouth of the north arm of the Fraser River.[5]

Dr. Roland B. Dixon and Mr. W. H. Hindshaw of our party made a hasty reconnaissance of the shore from the mouth of the Fraser to Vancouver. Dr. Dixon's report is given in the following paragraphs.

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[1] See pp. 140, 142, and map opposite p. 56, of this volume; also C. Hill-Tout, Later Prehistoric Man in British Columbia, p. 113 (Trans. Roy. Soc. Canada, Second Series, 1895-96, Vol. I, Sect. II, pp. 103-113). See also Christmas number of Mining Record, Victoria, B.C., 1899; and Report of the Ethnological Survey of Canada (Report of the British Association for the Advancement of Science, 1900, pp. 491-494).

[2] Shown on map opposite p. 56, and mentioned on p. 140, of this volume.

[3] See pp. 57, 60, 61, of this volume.

[4] See also pp. 57, 59, 60, of this volume; and C. Hill-Tout, Kitchen-Middens on the Lower Fraser (American Antiquarian, 1903, Vol. XXV, pp. 180-182).

[5] See p. 140 of this volume.

Shell-heaps, some of them at least a metre in depth, were found along the southern shore of Point Gray as far as that portion near its extremity where the bluff comes out directly to the beach. The shell-heaps were generally located at or near some small stream flowing into the sea; and in the immediate vicinity there were usually ancient "canoe-runways," that is, paths through the pebbles on the beach, such as the Indians still make in order not to break their canoes when dragging them up on the shore.

On and near the end of the Point no shell-heaps were found; but at a place approximately a mile and a half along the beach toward Vancouver from the logging-camp was a shell-heap about 25 metres long. In this some implements, including a perforated stone, a mortar, a pestle, and other artifacts, have been found. This was the largest shell-heap seen thus far on Point Gray, most of the others being small.

On the farm of Mr. Dalgleishe at Jericho there was a shell-heap more than 100 metres long. It was grown over with brush, and several stumps of large trees were standing on it. From this heap, or near it, Mr. Dalgleishe obtained four perforated stone objects.

One of these (Fig. 147) is of gray trachyte. The specimen is so much weathered, that, if the outline of the object had been artificially formed, all traces of such work are now entirely obliterated. Another perforated object ($\frac{16}{1614}$) was presented to us by Mr. J. M. Dalgleishe. It was found in the shell-heap on his farm, and is an oval pebble of porous gray stone, about 65 mm. long.

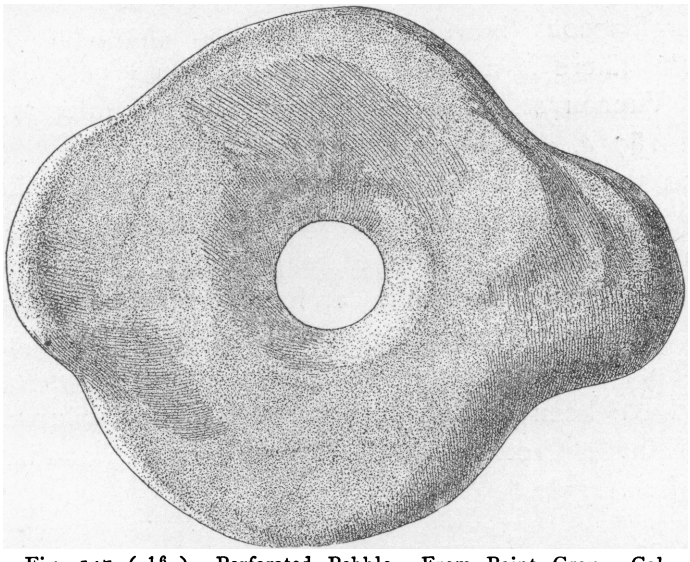


Fig. 147 ($\frac{16}{1033}$). Perforated Pebble. From Point Gray. Collected by Dr. R. B. Dixon. $\frac{1}{2}$ nat. size.

On the southwestern part of Sea Island there is a shell-heap extending irregularly over several acres, and at places reaching a height of a metre and more. The heap is on a slight elevation on low land about half a mile from the sea, and is approached by a narrow meandering water-course, through which canoes can pass at high tide.

Another shell-heap, on slightly higher land, is located about a mile inland from the northwestern part of the island. Undoubtedly there are many more such heaps on the islands and bottom-lands of the Fraser Delta. There are also shell-heaps at various places on the peninsula between the bottom-lands of the Fraser Delta and Point Roberts.[1]

At Point Roberts,[2] shell-heaps were examined on which cairn-like sepulchres had been made, leaving pits which contained human skeletons, and which are described on p. 61 of this volume. — A shell-heap in the form of a

[1] Cf. map opposite p. 56, also p. 140.

[2] See pp. 57, 59, and 61.

ridge extends from a point on the United States side of the line, at the present southeastern shore of Point Roberts, along the eastern shore of the point for about a mile to the northward, and ends on Canadian soil. About half a mile from its beginning at the beach, where it fills the space to the bluff, it turns back westward from the present shore line, and at its northern end is a comparatively long distance from the sea. Branching from the rear of this, and running parallel with it, is another shell-heap, probably an older one. The northern ends of these swing out in a line following the general trend of the beach, and some distance in front of the bluff. From the appearance of the coast, especially towards the northward, it would seem that the shore has been making out, and that formerly the sea must have washed against the base of the bluff, which extends backward and deviates from the line of these shell-heaps. The bluff is probably an old island; and the low land, delta deposit. If this be true, it would satisfactorily account for the distance from the northern end of the shell-heap to the present beach. Beyond the southern end the sea still washes the base of the bluff. We were told that on Mr. Alexander's farm, at the northern ends of these shell-ridges, there had formerly been a number of large pits about 10 metres in diameter and perhaps 5 metres in depth. These have now been entirely obliterated by ploughing. The specimens hereafter described are all from these ridges. Several skeletons were secured from these shell-ridges, but artifacts were seldom found. Like all the shell-heaps bordering salt water, which we explored, these ridges contained shells in a better state of preservation than those found in the heaps at Eburne or Port Hammond, where artifacts were numerous in proportion to the size of the heap.

There are shell-heaps some miles in extent on the high land about a mile back from the beach, north of the Canadian boundary-line, on Point Roberts. These heaps are usually composed of white shell material, most of which is not as much decomposed as the material of the Port Hammond and Eburne heaps. In places they reached a maximum height of no less than 1.3 metres.

At Fort Roberts, on the western side of Point Roberts, there is a shell-ridge about half a metre high, and twelve metres wide, extending parallel to the beach on the rather high land to the south of the village.

The shells found in the shell-heaps near Point Roberts include those of *Tresus nuttalli* Conrad, *Saxidomus nuttalli* Conrad and *Tapes staminea* Conrad, *Mytilus edulis* Linnæus, *Ostrea lurida* Carpenter, *Cardium nuttalli* Conrad, *Purpura crispata* Chemnitz, and both small and gigantic barnacles. Shells of land-snails (*Selenites* [*Macrocyclus*] *vancouverensis* Lea and *Arionta townsendiana* Lea) were found; but these may have crawled into the shell-heap, and were not necessarily the food of the people who threw out the shells forming the heaps.

Shells of the dentalium (*Dentalium pretiosum* Nuttall) were found in the shell-heaps. Some of the mussel and cockle shells were burned.

Fig. 148 illustrates a pebble, in each side of which is a pecked pit. These are evidently the beginnings of a perforation. The object is probably an unfinished net-sinker, or a weight for setting lines.[1]

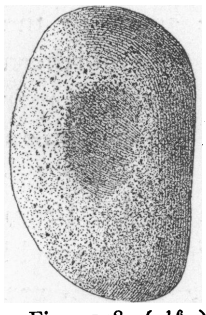


Fig. 148 ($\frac{16}{5824}$). Pebble with Pecked Pits. From Point Roberts. $\frac{1}{2}$ nat. size.

A fragment of the striking-end of a pestle ($\frac{16}{5824}$) was also found here. It is similar to those from Vancouver Island,[2] Stanwood, and Burton (see Fig. 126, *a-c*, p. 339).

Four specimens that were evidently whetstones were found at Point Roberts. One ($\frac{16}{5825}$) is of very coarse sandstone, — a thick angular fragment, apparently somewhat water-worn, or at least weathered. It has been rubbed on one side only, through use as a grinder. It is apparently a fragment of a large grinder or lower hand-mill. The three remaining specimens are of fine, thin-bedded sandstone. The first ($\frac{16}{5827}$) is roughly triangular, of reddish color, rubbed smooth on one surface and only a little on the other. It has broken edges, the shortest one somewhat smoothed as if from wear, but the other two broken as if the object had been part of a large whetstone. The second ($\frac{16}{5833}$), found on the surface, is of gray color, and has two broken edges, and two rounded as if by the surf. It may be merely a natural fragment. The third ($\frac{16}{5834}$), also found on the surface, is gray in color. All edges save one have been smoothed. Both sides have been used for sharpening tools.

A cylindrical object ($\frac{16}{5826}$) made of light stone of a gray color, resembling lava, was found. It has somewhat irregular ends, and is slightly larger at the top than at the bottom. The stone is apparently too soft for use as a pestle, and resembles similarly shaped stones found on Vancouver Island, at Fort Rupert, and at the mouths of the Klicksiwi and Nimkish Rivers, such as were used for gambling in a game resembling quoits.

YALE.

Mr. Daniel Ashworth of Wappingers Falls, N.Y., who spent over four years at Yale (from 1880 to 1884), made a collection of specimens from that vicinity, the most interesting of which are described in the following pages.

A small dish (cast No. $\frac{16.1}{129}$) made of steatite or slate, and shaped like a canoe, was found at or near Yale by an Indian. It is lenticular in horizontal section, has a flat bottom, and is cut down a short distance at the two ends, below the top of the rim of the dish. In each end are two per-

[1] Cf. Fig. 22, p. 155 of this volume.

[2] Cf. Smith, American Anthropologist, N. S., 1899, Vol. I, Fig. 11, *b*, p. 365.

forations, one above the other. The Indian said it was made for a toy for his children by their grandfather; but, as the grandfather and several other members of the family afterwards wanted to be paid for it, it would seem possible that the object may have been more than a toy, possibly a ceremonial object.

Pestles or hammers of several forms were found. One is of the typical form found on western Vancouver Island, with two striking-heads (one smaller than the other), having nearly parallel but slightly convex faces. Another pestle has a large striking-head resembling that of the typical form of western Vancouver Island; but the top is somewhat hat-shaped, having a nipple which is long and sharp and meets a nearly flat surface at the end of the top flare of the body, there being no head or disk-shaped brim. Three of these specimens resemble the typical pestle of western Vancouver Island, but the smaller striking-head is more or less rounded at the edges. Another object, a fragment of the upper part, being broken across the body, has a conoid top, which is divided by four grooves so that it presents four ridges with a nipple at the top. This form of top may be compared to the one shown in Fig. 23, *e*, of this volume. It resembles the tops of some pestles from Alaska.[1]

Another specimen (cast No. $\frac{16}{131}$) was collected at or near Yale by Mr. Ashworth. It is a somewhat cylindrical tough stone. The lower end is disk-shaped, like the head of a pestle. From it to the top extend pecked grooves. Mr. Ashworth states that this is a pestle which was broken in process of manufacture; and this is in accord with our own idea of similar specimens, and with information secured by Professor Franz Boas from the Kwakiutl Indians of northern Vancouver Island, the process of manufacture being to peck the grooves, leaving ridges between them, to batter down these ridges, and repeat until the desired form was attained. A celt made of serpentine, similar to other celts from this general region, was found by Mr. Ashworth during excavations near Yale, and he has several like it in his collection. A grooved axe (cast No. $\frac{16}{135}$) was purchased by him from an Indian at or near Yale, who showed him how the people formerly hafted such objects in a split stick, fastening the axe in place with withes. The poll is hemispherical; the cutting-edge has been sharpened about equally from both sides, and the sharpening-surfaces are quite convex; the edge is convex in outline, and has been battered until it has become quite flat. The groove extends around the sides and rear edge, and occupies about half the distance between the middle of the specimen and the top. The ungrooved side-edge of the blade is flatter than the other, and meets the sides at a slight angle. One side and the side-edge are crossed by a pecked surface, as if a second groove had been attempted. These two grooves, as well as the general shape of the axe, remind one of the grooved axes found in the

[1] See American Anthropologist, N. S., 1899, Vol. I, Fig. 12, *f* and *g*, p. 366.

Southwest. Grooved axes are rarely found in the region including Washington and the southern interior of British Columbia, and the one just described is the most authentic specimen from the whole area of which I have any knowledge. There is one other known to me. It is an axe made of stone and grooved entirely around. It is in the museum of the Oregon Historical Society at Portland (No. 237, List 30), and is labelled as coming from the Cascades. It is hafted in the split end of a stick, and held in place by thongs. It appears to have been grooved recently, and the handle bears cuts resembling those made by a modern axe. The edge of this specimen bears longitudinal lines similar to those found on some skin-scrapers and on the sharp end of many of the agricultural implements chipped from stone and found in the middle Mississippi Valley. They also somewhat resemble the results of the action of the natural sand-blast, such as affected many specimens in the Columbia Valley. The material is a black or blackish-gray stone, possibly diorite. There is a longitudinal groove pecked in one side of this specimen. This specimen may have been taken west among the belongings of some pioneer, or it may have been hafted from a description similar to that given by Mr. Ashworth. The method of hafting is similar to that employed for skin-scrapers.[1] The only other grooved axe from the Pacific coast of America which has come to my attention is from Central California.[2] Dr. J. W. Hudson informs me that several grooved axes have been found in northeastern California, but that they are supposed to have been brought there in prehistoric times from farther east.

The specimen shown in Fig. 149, *a*, was found at or near Yale by Mr. Ashworth. This is apparently a fragment of a war-club or ceremonial weapon. One point has been broken off, and also the end of the shaft. The latter may have been pointed, and the object used as a dagger; but it seems more likely that it is a double-bitted axe, somewhat similar to the other specimen shown in Fig. 149. The modelling of the object suggests that it may be a copy in stone of an implement with a wooden handle, in the split point of which a double-pointed stone club-head was held by lashings, which are indicated in *b* by the crossing ridges. The specimen shown in

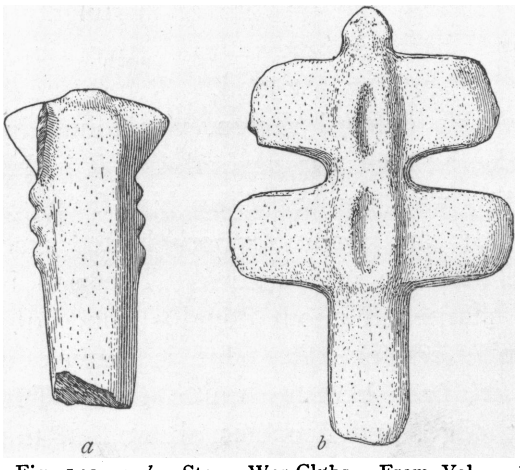


Fig. 149, *a*, *b*. Stone War-Clubs. From Yale and Vicinity. (From casts $\frac{16\cdot1}{133}$, $\frac{16\cdot1}{134}$.) $\frac{1}{4}$ nat. size.

[1] See Vol. I, Figs. 64 (p. 147), 127 (p. 185); and Plate XIV, Fig. 1.

[2] Roland B. Dixon, The Northern Maidu (Bulletin of the American Museum of Natural History, 1905, Vol. XVII, Fig. 5, p. 135).

Fig. 149, *b*, has two blades, each of which is double-bitted. The whole object is made of one piece of stone. It is of a light-gray color. The handle is nearly oval in cross-section. The blades have but slightly convex sides; and the cutting-edges, which are also convex, are sharpened equally from each side. So far as I am aware, it is the only double-bitted object from north-western America. It might have been brought here, and afterwards purchased by Mr. Ashworth. This specimen was originally purchased on the Caribou Road, between Lytton and Yale. Mr. Ashworth showed it to an Indian, who said it was used in war and also sometimes for hunting.

A club-shaped specimen of greenish-gray slate (cast No. $\frac{16.1}{136}$), 86 mm. long, was purchased by Mrs. Ashworth from an Indian woman from Skuzzy. It somewhat resembles the head and neck of a sitting bird with open beak, the jaws being broken off. The long neck, which forms the shaft, tapers towards its lower end, where it is cut off square.

Cairns similar to those shown in Fig. 1, Plate I, of this volume, and composed of bowlders as large as a bucket, were described to me by Mr. Ashworth as having been seen by him at a point a mile and a half below Yale, between the Fraser River and the track of the Canadian Pacific Railway. He saw skeletons washed out of these cairns by the freshet of the river. A number of carvings from this region will be described later on.[1]

New Whatcom.

A flat ovoid stone with pecked grooves was seen in a store at New Whatcom, and it was probably found in that vicinity. One of the grooves extended around the larger end about one-third of the distance down, and the other ran from the middle of the groove in the side of the object up over the end and into the groove on the opposite side; so that the specimen somewhat resembled the one shown in Fig. 124, *b*. The other end was somewhat sharpened, like the blade of a grooved axe. The object was about 200 mm. long, and may have been a net-sinker or an anchor for fish-lines.

Marietta.

At Marietta, near New Whatcom, Wash., Mr. Allen says a semicircular trench existed on his farm. He showed me traces of the trench, which he said had been filled in by his father. It was surrounded by shell-heap material, which extended as a ridge parallel with the beach, and reached in places a maximum height of 1 metre.

Mr. Clark of Marietta, Wash., has a small collection of archæological specimens which he made from the shell-heap on the Lummi Indian Reser-

[1] See Figs. 185, *a*, *c*; 189; 190; 191, *c*, *d*; 192; 193; 195, *b*; also 172, *d*, *d'*, and 191, *b*.

vation, west of the mouth of the Nooksack River and in the immediate vicinity of this heap.

The shells found in this shell-heap include those of *Tresus nuttalli* Conrad, *Saxidomus nuttalli* Conrad and *Tapes staminea* Conrad, *Mytilus edulis* Linnæus, *Ostrea lurida* Carpenter, *Cardium nuttalli* Conrad, *Purpura crispata* Chemnitz, barnacles, and the limpet possibly *Acmæa instabilis* Gould. Spines and plates of the sea-urchin, crab-claws, and fish-bones were frequently found in the layers.

On the beach at Marietta, nephrite bowlders were found. This nephrite resembles that from Lytton, the Thompson River region,[1] and the Lower Fraser River.[2] Of three greenish bowlders ($\frac{16}{7330}$) collected by me, one was identified by Mr. George F. Kunz as quartzite, and two as nephrite. Many bowlders which seemed to be similar to these three, and to be of the same material, were seen.

Fig. 150 ($\frac{16}{7325}$). Harpoon-Point. ½ nat. size.

Possibly this nephrite may either be found in situ on Upper Nooksack River, or the material here and at Lytton may be derived from the same source, and may have been carried by glaciers.

Only one simple point made of bone ($\frac{16}{7329}$) was found. It lay 1 metre deep in the shell-heap at Marietta, is made of a flat piece of a thick, firm, long bone, is somewhat lozenge-shaped, and 68 mm. long. The base is cut nearly square across, the basal end being somewhat rounded. The point is sharpened from the sides and edges, while the corners so formed are rounded. Striations show on all surfaces.

Fig. 150 illustrates a harpoon-point made of antler. The shaft, with a nearly square back, has the sides bulging, and curving to a sharp edge in front. The barbs are set out by cutting into the outline of the point. The lower surfaces of the barbs are cut in from both sides; while the upper surfaces, with the exception of that of the barb nearest the tip, are cut square across. The whole surface of the object is smooth from disintegration. It was found 30 cm. deep in the shell-heap on the Lummi Indian Reservation, at the western side of the Nooksack River, near its mouth.

Fig. 151 illustrates an anchor weighing twelve pounds, probably used for a small canoe or for fishing-tackle. It is made of an irregularly flat oval micaceous sandstone bowlder. The specimen was found 75 cm. deep in the shell-heap at the western side of the Nooksack River, near its mouth.

One pestle, made of greenish quartzite ($\frac{16}{7338}$), was among a number of

[1] Cf. Vol. I, pp. 132 and 407.

[2] Cf. p. 140 of this volume.

specimens purchased by us from a man who lived at Marietta, and who said that these specimens were found there. It has a short striking-head with a convex face. The head is slightly larger where it meets the body than at the end. The top is hat-shaped, with a sharp spire rising abruptly on a flat brim. Except for this spire, the top of this pestle resembles that of a double-headed pestle of the typical form, the upper head being smaller than the striking-head, but otherwise of the same form.

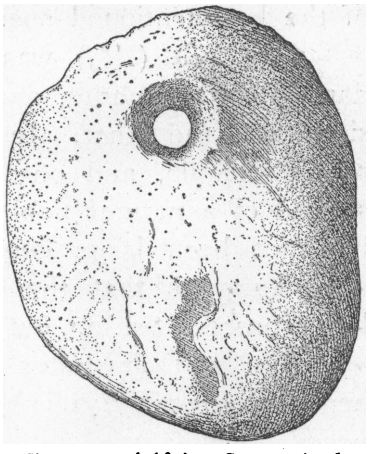


Fig. 151 ($\frac{16}{7303}$). Stone Anchor. $\frac{1}{4}$ nat. size.

Two stone mortars — one small and deep, the other large and flat — are among the specimens purchased by us at Marietta. The one shown in Fig. 152, *a*, is made of a gray disk-shaped trap bowlder. The bowl is 80 mm. in diameter by 35 mm. deep. Below the groove around the bowl, the outer surface of the specimen is natural, as is also the space between the groove and the bowl. The other (shown in Fig. 152, *b*) is made of a yellowish-gray granite bowlder, with a smooth, shallow, saucer-shaped bowl 20 mm. deep. It has a flat bottom. The inner sides of the bowl are made up of four nearly flat facets, so that the depression suggests a low inverted pyramid. Where these surfaces meet, four very slight and wide grooves form a cross extending entirely across the surface. The nearly flat rim is ground smooth. Around the top of the outside is a pecked and smoothed space, which in some places becomes a groove. From this, running down to the flat base of the object, are eleven wide shallow grooves, six being closer together than the remaining five. It seems improbable that this object was inverted and used as a pile-driver, like those found on Vancouver Island, which have two hand-lugs, or those found at Grays Harbor, which have a single handle.

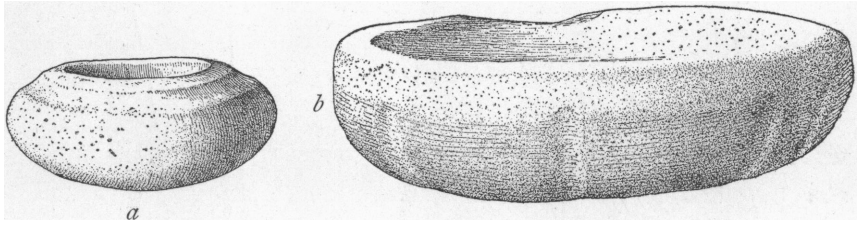


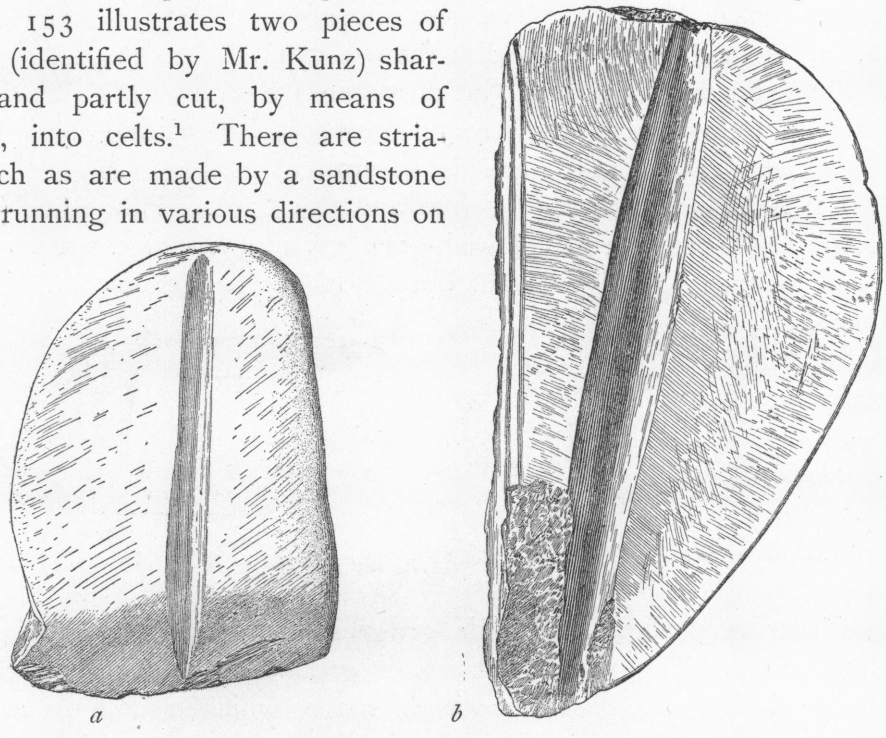
Fig. 152, *a* ($\frac{16}{7333}$), *b* ($\frac{16}{7332}$). Stone Mortars. From Marietta. $\frac{1}{4}$ nat. size.

Three wedges made of antler are known from this vicinity. Two ($\frac{16}{7324}$, $\frac{16}{7326}$) were found by us 30 cm. deep in the shell-heap at Marietta. The third ($\frac{16}{7337}$) was purchased at Marietta. All have been battered on the end. The first is short and wide, with the edge sliced off mainly from the inner side of the antler. The second is a curved prong sharpened from the concave side and polished from use on the convex side. The point is broken off. The third was made of a prong by slicing off, mostly from one side, forming

a convex curve rather than a bevel. It is polished, apparently from wear. The second and third have been slivered off by pounding, which, in the case of the last-mentioned specimen, has destroyed about two-thirds of its bulk.

One celt ($\frac{16}{7336}$) was among the specimens purchased. It is made of dark-colored nephrite, and is sharpened by a convex surface more from one side than the other. In outline it is irregularly rectangular, but the edge is rather oblique, and one corner of the top is rounded off, and resembles the surface of a natural pebble, as if the material out of which the celt was made had not been large enough to make it rectangular. A broken pit in one edge suggests that the piece was cut out by grooving and breaking, the latter process tearing out this pit between the bottoms of the grooves.

Fig. 153 illustrates two pieces of nephrite (identified by Mr. Kunz) sharpened, and partly cut, by means of grooving, into celts.[1] There are striations, such as are made by a sandstone grinder, running in various directions on



a *b*

Fig. 153, *a* ($\frac{16}{7335}$), *b* ($\frac{16}{7334}$). Nephrite Celts in Process of Manufacture. Purchased at Marietta. ½ nat. size.

nearly all surfaces of these objects, and longitudinal ones in all the grooves. These grooves were probably made with a sandstone grinder or plough; but since the bottom of every groove curves gradually up from one end to the middle, and down to the other end, all of them could have been made by means of a string and sand. No ploughs or grinders were found near Marietta; but, judging from their relative frequency at other places, even one would seem to be out of proportion to the small number of specimens seen from this particular vicinity. The lower part of each specimen is sharpened to a celt-like edge, and each strip removed would consequently already be sharpened

[1] Cf. Vol. I, pp. 132, 133, 143, 407, and 416; also pp. 140, 164, and 167 of this volume.

for use, and would not even require smoothing along the grooved and broken edges. However, the celts, as commonly found in British Columbia and Washington, are so smoothed. As previously stated,[1] recently such stone celts used as adzes have been replaced by iron files sharpened for the purpose, and by axe-blades cut in two on a plane at right angles to the cutting-edge. In this respect the recent iron axe-blades resemble these nephrite pieces, being cut in the same direction.

The first of these two specimens is a flat pebble of light waxy green fibrous nephrite. It is 22 mm. thick. The grooves — one on each side, nearly opposite each other — are from 3 mm. to 4 mm. deep, leaving about 15 mm. of the pebble to be broken, possibly after further grooving, in order to divide the object into two celts. The natural surface of the pebble, which still retains traces of fracture along one edge and in a notch in the other, has been faceted by grinding around the edges. The second is a flat, almond-shaped piece of dark-bluish color, from which a portion has been broken off after grooving from each side. It is 25 mm. thick. Part of a groove at the edge on each flat surface, and the broken edge between these grooves, may be seen. From that edge a piece has been removed, apparently about one-third of the size of the original. The other, or unbroken groove, is 18 mm. wide and 9 mm. deep, leaving about 16 mm. of the piece to be cut or broken through in order to detach the next strip, out of which to make a celt. The entire edge of the specimen, except along where the piece has been removed, is sharpened to a celt-like edge. In this specimen the part at the side-edge from which a strip has not been taken is, as previously mentioned, sharpened; so that, if it were detached and the broken edge smoothed, it would form an object resembling in shape a semi-lunar knife. Finished objects of this sort, made as thick as this or of nephrite, have not been found, so far as I am aware, in British Columbia or Washington, all finished objects made of nephrite being celt-like. It consequently seems probable that this part of the piece was also intended to be fashioned into a celt, and to have the sharp side-edge ground more or less square. Why it was ever sharpened is not apparent, unless the object was intended in its entirety for an implement which was later cut up, or unless it was easier to sharpen the long edge than to sharpen each celt singly.

One piece of antler, a semi-cylinder cut off at one end by hacking around and breaking, pounded and slivered on the other end ($_{7}\frac{16}{323}$), was found in the shell-heap on the Lummi Reservation. The hacking extends around on the flat side of the antler, which suggests that it is the top of a wedge which was badly slivered, and was cut off to form a shorter and reheaded wedge.

The ulna of a small mammal, probably a dog ($_{7}\frac{16}{327}$), was found 60 cm.

[1] See p. 163 of this volume.

deep in the shell-heap at Marietta. The point of the object, which is apparently an awl, is broken off.

Fig. 154 illustrates a tablet of stone, probably argillite.[1] The specimen is about 11 mm. thick, and pierced near its longest edge. This drilled perforation shows no signs of wear. The straight edge seems to have been cut off, and it is smoothed over evenly. The lower edge shows part of a groove on each side, and a broken part in the middle which has been smoothed off. These marks resemble those found on some celts from this region which show how they were cut into suitable form. The other edges are rounded, but show some facets. At the upper right-hand corner the edge becomes sharp, like that of a celt; and here, extending down about halfway along the reverse side of the object, a transverse groove shows. The specimen looks like a portion cut from a celt-blade, but its use is unknown. It was found on the surface, on the Lummi Indian Reservation, about three miles southwest of the shell-heap.

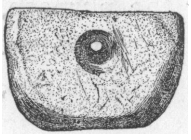


Fig. 154 ($\frac{16}{1331}$). Stone Tablet. $\frac{1}{2}$ nat. size.

In Mr. Clark's collection[2] is a flat disk-shaped pebble with a central perforation made tapering from each side. It resembles one found at Port Hammond,[3] and was probably a fish-net sinker. It was found on Lummi Island.

Eliza Island.

The postmaster at Marietta stated that there are shell-heaps on Eliza Island, which is in Bellingham Bay, seven miles south of New Whatcom. Mr. George Judah of Anacortes stated that the place is an old Indian camp, and has numerous markings with stones, presumably cairns; and that prehistoric bones have been found there.

Skagit River.

According to information obtained at Everett, there is a shell-heap 1.3 metres high on the south side of Skagit River, about halfway between Sedro and Lyman. — Extensive shell-heaps may be seen on the south side of the Skagit River about a mile from Mount Vernon, according to Mr. Argyle. — There is a shell-heap along the north side of the slough about three miles and a half southwest of Mount Vernon. It is on what is known as Pleasant Ridge. According to Mr. Thomas F. Murphine, it covers about seven acres to the height of about 3 metres. There is a shell-heap about half a mile north of Skagit City, in the angle between the North Fork and the main river. Another heap is on the north side of a slough about a mile east of the river, at a point a mile south of Fir.

[1] Cf. Fig. 164. [2] See p. 367. [3] Cf. Fig. 22, *b*, p. 155 of this volume.

PORT SUSAN.

Port Susan is the body of water between Camano Island and the mainland, beginning with the southern end of the island. It has many shell-heaps. The situation has all facilities for Indian camping-places.

UTSALADY, CAMANO ISLAND.

At Utsalady, on Camano Island, in Island County, is a shell-heap[1] which measures 3.3 metres high at its highest point, and runs along the beach for about half a mile. It extends a short distance back into the forest, and large trees stand on some parts of it. At one place which is free from woods, and was recently occupied as a section of the lumber village of Utsalady, we noticed oval depressions about 20 metres long by 13 metres wide, walled around with shell-refuse and earth, which were evidently prehistoric Indian house sites. These ran lengthwise with the beach, as do the modern Indian houses of this particular region. These houses are sometimes 90 metres long by 13 metres wide, have high fronts facing the sea, and roofs sloping slightly back toward the forest.

There is a shell-heap on Camano Island, on the north side of the road, west of the bridge from Lands Island, about two miles west of Stanwood.

According to Mr. Murphine, there are many cairns covering the entire hillside at Livingston Bay, on Camano Island. He counted two hundred on about two acres, and found a skeleton in one of these. They resemble those on Whidbey Island, about five miles north and fifteen miles west, described before,[2] being very shallow. The stones, however, are smaller, and flat rock is more common, no beach-rock being among them. Mr. Murphine found no evidence of shell-heaps around this small bay, the nearest one of any size being at Utsalady, about four miles to the northwest. The skeleton was on the side, head east, arms north, and legs extended west.

Shell-heap No. 1, over 1.3 metres high, is on the east side of the Stellaguamish River, about a mile southeast of Stanwood; No. 2, over 1 metre high, is at the north end of a low ridge on the low land near the bluff-line, and between the railroad and the wagon-road about two miles north of Stanwood; and No. 3 (over 30 cm. high), No. 4 (over 75 cm. high), and No. 5 (over 1.3 metres high) are on the low land on Mr. Heller's ranch, at the base of the bluff-line west of the railroad, about three miles north of Stanwood.

STANWOOD.

The shells found in the shell-heaps near Stanwood include those of *Tresus nuttalli* Conrad, *Saxidomus nuttalli* Conrad, *Mytilus edulis* Linnæus, *Ostrea*

[1] See map opposite p. 56 of this volume.

[2] See pp. 55, 56, 58-60, and 74 of this volume.

lurida Carpenter, *Purpura crispata* Chemnitz, a *Natica*, and barnacles. Shells of land-snails (*Selenites vancouverensis* Lea) were found, which may have crawled into the shell-heap, and were not necessarily the food of the people who threw out the shells forming the heaps. Shells of *Pecten caurinus* Gould were found. These were hardly numerous enough to be considered as remains of food-animals, but may have furnished material for ornaments. Charcoal was also found among the layers. Red ochre ($\frac{16}{7345}$) was found 45 cm. deep in Shell-heap No. 1.

Of points rubbed out of bone, thirty were collected here. Eleven are simple points, — four complete, and seven broken in such a way that it is impossible to state positively that they may not be parts of other bone objects. Four are barbs of salmon-harpoons, — two of the grooved variety, used with bone points; one of the flat variety, used with blades; and one indeterminate. Five are large simple points, — two whole and three broken. Ten are barbed harpoon-points, all of them fragmentary. Two of these are of the type shown in Fig. 16, *c*; one is like that shown in Fig. 17, *n*; and three are similar to those shown in Fig. 17, *f* and *g*, of this volume.

Fig. 155 ($\frac{16}{7388}$). Bone Awl. From Stanwood, Wash. ½ nat. size.

Fig. 155 represents a point, a barb, or awl, found 75 cm. deep in Shell-heap No. 4 at Stanwood, Wash. It is nearly oval in section, but flat on the side shown in the illustration, made of part of a large bone. There are deep longitudinal striations in the bottom of the marrow-canal, suggesting a slip in its manufacture, or an attempt to pierce the implement at that place. This suggests that the object may be an unfinished needle, but its form is not sufficiently specialized to explain its use satisfactorily. Similar specimens, but with both ends pointed, were found in the shell-heap at Port Hammond.[1]

One pestle ($\frac{16}{7470}$) was found here, in Shell-heap No. 5. It is the only one seen by us near Stanwood. Both faces are convex; and both striking-heads are of about the same length, but the upper one resembles a knob. This is probably because the sides of this head bulge. Those of the lower or larger head bulge but slightly. The body is slightly thickened in the middle. Two large chips have been flaked from the ends of each head, showing that both heads were used. The pestle appears as if it had been made from a long oval pebble by flattening the ends and pecking out a handle between them, leaving a portion of the natural surface of the pebble as the sides of the striking-heads. Peck-marks show on the ends and body.

A fragment of a slab of sandstone ($\frac{16}{7467}$), apparently a piece of an outcrop, but rounded on part of the edge by some such agency as the surf, and with

[1] Cf. Fig. 14, *a*, *b*, p. 147. See also Fig. 161, *b*, of this volume.

a shallow oval dish ground in one side, may be a mortar, or a grinder on which celts and similar objects were sharpened. It was found 30 cm. deep in Shell-heap No. 4.

Thirty-six wedges are among the finds made by us near Stanwood. They vary from 70 mm. to 245 mm. in length. Thirty-one are fairly straight, and five are curved. Seven of the straight wedges, but none of the curved ones, are sliced off more or less from both sides, while twenty-four of the former and all five of the latter are sliced off chiefly from the convex side. Twenty-four, all that are not compressed at the top by battering, are not broken off there. Fourteen of these are slivered at the top, as if from being driven. Eight of those broken off at the top are so short, and the antler cells of most of them are so bent, that it would seem they must be the points of wedges broken off by a side-blow or side-movement while firmly embedded in a log.

Fig. 156 illustrates a longitudinal fragment of a large wedge, made of close-grained, firm elk-antler, which is partly cut in two lengthwise by a small groove incised on the unbroken and less bevelled surface. The top of the wedge has been shivered by the crushing blows from a stone hammer. There are many striations near the groove, and running from it or nearly parallel with it, which probably mark the first efforts to start the cut, and the slips of the cutting-tool. The purpose apparently was to make use of the antler material of the broken wedge by cutting it into two smaller wedges, chisels, or pieces for the manufacture of other objects.[1] It was found 30 cm. deep in Shell-heap No. 5 at Stanwood.

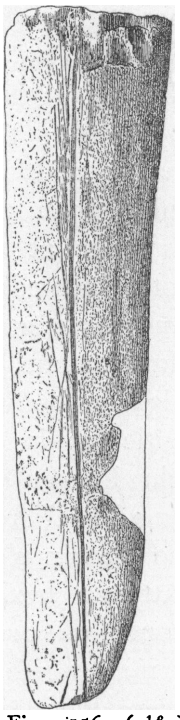


Fig. 156 ($\frac{16}{7\,4\,9\,4}$). Wedge. From Stanwood, Wash. $\frac{1}{2}$ nat. size.

A splinter of a long bone, sharpened to a wedge-like edge, and rounded on the higher broken parts as if by the surf or by long use ($\frac{16}{7\,4\,1\,1}$), was found 15 cm. deep in Shell-heap No. 5. It is 109 mm. long, and the top is splintered as if it had been driven. It was no doubt used as a chisel or wedge. Another specimen ($\frac{16}{7\,4\,4\,9}$) found in the shell-heaps was apparently used as a dagger or as some sort of plaiting-tool. It is made from what is apparently the tarsus bone of an ungulate. Part of the articular surface remains at one end as a handle. It shows no signs of having been driven. The shaft was made by cutting out a sharp segment, about one-third of the circumference of the bone at its base.

A specimen found 45 cm. deep ($\frac{16}{7\,4\,6\,4}$), near a skeleton in a shell-heap, was apparently a chisel or carving-knife used like an engraver's tool. It is made by squarely cutting or breaking off the articular surface of the proximal

[1] See p. 161 of this volume.

part of what appears to be the ulna of an elk or similar mammal, and sharpening the point to a wedge-like blade by a convex bevel from each side. The tips of the two articular projections are cut or ground off, apparently to facilitate handling. The blade was narrowed by cutting off the edge. This object may be simply a larger form of the chisel-edged awls; that is, one made of a corresponding bone of a large animal. Such chisel-edged awls, found at Comox, are mentioned on p. 317.

Celts to the number of four were collected by me in this vicinity. These range in length from 75 mm. to 113 mm. One ($\frac{16}{7410}$), the shortest, was found 1 metre deep in Shell-heap No. 5. It is quite thick, and is made of greenish-gray stone, apparently serpentine. The poll is broken squarely off, and the higher broken parts are rubbed smooth. The edge is convex in outline. One side is slightly flatter than the other, and is bevelled with a less bulging surface, and at a sharper angle. The side-edges are convex in outline, and each shows the remains of a groove and the broken space by means of which the piece was cut out; but these edges are partly rubbed down. The longest of these ($\frac{16}{7382}$) was found 30 cm. deep in Shell-heap No. 3. It is made of mottled greenish-blue nephrite (identified by Mr. Kunz). It is thin; the poll is broken off. The nearly straight cutting-edge is very sharp, and the flatter face is bevelled slightly more and has less of a bulge than the other. The side-edges are nearly straight, but the object is wider at the cutting-edge than at the poll. A groove on each side of both side-edges, and the smoothed broken space between them, show. Another specimen ($\frac{16}{7349}$), found 60 cm. deep in Shell-heap No. 1, is made of bluish stone, apparently serpentine. It is wide at the poll, and the cutting-edge is convex. Only part of the surface has been polished. It is roughly lenticular in section. The fourth specimen ($\frac{16}{7442}$), found 60 cm. deep, has a thin broken poll, diverging side-edges, slanting cutting-edge sharpened by a long bevel from the more convex side, and a short, more bulging bevel from the flatter side. In section it is lenticular, tending to be of the form of a flattened hexagon. A celt about 400 mm. long, finely made of a dark-blue stone, was recently found on the delta land below the bluff-line, about half a mile north of the railroad-depot at Stanwood, by Mr. Frank Douglas. A large long oval pebble of milky-green serpentine, apparently burned and rubbed on the flat sides, so that one facet shows on one side and two on the other ($\frac{16}{7450}$), was found 45 cm. deep. It was perhaps material selected and partly worked into a celt. A small flake of serpentine, somewhat smoothed on one edge, as if from being in the surf ($\frac{16}{7380}$), was found in Shell-heap No. 3. A groove may be seen that cuts nearly through, across one end, and the remainder of the thickness was broken across. Part of the side near this groove is also ground off flat. It is apparently a piece cut off for making a celt, or sliced off in the manufacture of one.

A rough piece of sandstone ($\frac{16}{7364}$), found in Shell-heap No. 1, has the shorter of its two side-edges sharpened about as much as an ordinary celt by a nearly straight bevel from each side. It is no doubt a grinder of the type used for cutting the grooves by means of which celts were cut out.

One entire celt-haft, and fragments of four others, all made of antler, were found near Stanwood. The fragments range from 95 mm. to 123 mm. in length. They are oval in section, and bevelled off at the edges. The holes for haft and handle are more or less oval in section. One specimen ($\frac{16}{7406}$) found 75 cm. deep in Shell-heap No. 5 has an oval pit in one side-edge, about 30 mm. from the end. Fig. 157 illustrates a celt-haft made from an antler wedge. The wedge was made of a large prong, the natural surface of which shows in places. In what was the top of the wedge is a hole for receiving the celt. It is a long oval in section, tapering slightly toward its bottom, and 75 mm. deep. The hole is so nearly a long rectangle in section that it raises the suspicion that the celt hafted in it was one of those recently made in this region from iron files. The end of the haft here is depressed in the middle, and is bevelled off from each side. The cellular part of the antler, at what was the edge of the wedge, is compressed as if from driving the hafted celt. The surface of the specimen, which was found on the talus slope where the sea cuts into the shell-heap at Utsalady, is quite smooth from decomposition.

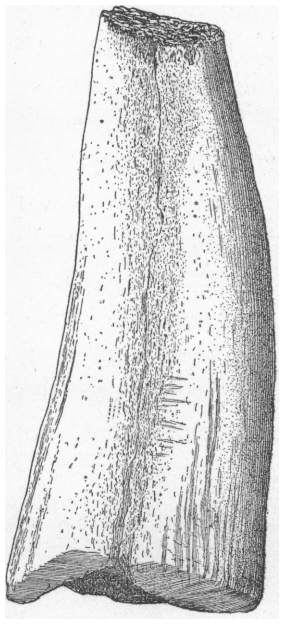


Fig. 157 ($\frac{16}{7471}$). Celt Haft. From Utsalady, Wash. ½ nat. size.

Several tips of prongs of antlers hacked and then broken off were found. One has been pounded on the broken end, and its top was worn. It may have been used as a punch. One fragment shows four facets at the tip, and is cut off smoothly and obliquely, forming a concave surface at the end. No other such cut in antler has come to my notice.

A piece of sandstone used as a whetstone or grinder ($\frac{18}{7466}$) was found 30 cm. deep in Shell-heap No. 4.

Two awls made of the proximal part of the ulnæ of deer ($\frac{16}{7135}$, $\frac{16}{7440}$) were found 75 cm. deep. In general, these are similar to those found at Port Hammond, Eburne, and Kamloops.[1] These two are sharpened by cutting off from the edges, the sides retaining their natural form. Four other awls are mere splinters of long bones sharpened at one end. One found 45 cm. deep in Shell-heap No. 4 ($\frac{16}{7386}$) has a somewhat wedge-shaped point, and the end is pounded so that it would seem to have been used as a chisel. Another ($\frac{16}{7378}$), 188 mm. long, was found in Shell-heap No. 3. The edges

[1] See Vol. I, Fig. 357, *a*, p. 420.

are rubbed smooth, and the end has been pounded. One awl ($\frac{16}{7428}$) is made of a slender hollow bone. Another piece made of solid bone or ivory ($\frac{16}{7391}$), found in Shell-heap No. 4, is broken off at the point, has two grooves around its base, and interrupted spiral incisions along the shaft. It is perhaps the base of an awl.

A fragment of an object made of the umbo of a very large thick mussel-shell ($\frac{16}{7350}$) was found 75 cm. deep in Shell-heap No. 1. The whole convex surface has been ground smooth, and the edge at the tip shows similar rubbing, the remainder of the edge having been broken away since the grinding took place. A fragment of a shell of *Tresus nuttalli* Conrad ($\frac{16}{7433}$) contains a quantity of red ochre. An irregular cylinder of whitish stone ($\frac{16}{7369}$) was found in Shell-heap No. 1. The ends are slightly larger than the middle part. It is perforated with a small hole, and the surface is smoothed as if by the surf. It may have been a bead, but the irregularity of the perforation suggests that it is a natural formation. The ends of the perforation are worn, however.

On one specimen made of antler, and on a pebble of clay stone which is slightly chipped, incised-line ornaments, very rude in character, are found. Those on the pebble form crude checks.

Nine human skeletons were found in the shell-heaps near Stanwood, Of these, all were flexed, six on the right side, five with heads east, two with heads northeast, and three had the hands to the face.

Penn Cove, Coupeville, and San de Fuca.

There is a shell-heap on the southern shore of Penn Cove, about a mile and a half west from Coupeville. This extends about 200 metres along the beach, is only about 1.2 metres wide, and very shallow. A wedge made of antler ($\frac{16}{7339}$), found on the surface, is the only specimen discovered by us in several hours' search at this place.

Another shell-heap is located at the southwest head of Penn Cove, two or three miles west of Coupeville. This is much larger; and while we found no specimens ourselves, we were able to purchase several from a woman living near the site. These she said all came from the site.

A large and deep shell-heap, composed largely of white shell material, was seen on the slope near the beach, on the north side of a small ravine three miles and a half northwest from Coupeville, or a mile and a half west of San de Fuca, at the most westerly point of Penn Cove. There were a number of cairns at this place on both sides of the ravine, which have been described before.[1]

[1] See pp. 55, 56, 58-60, and 74 of this volume.

Fig. 158 illustrates a leaf-shaped point chipped out of mottled-brown chert, purchased at Penn Cove. It resembles the chipped points found east of the Cascade Mountains, at such places as Ellensburg and Priests Rapids, especially in the appearance of the material out of which it is made; and it suggests that the material for at least some of the chipped implements found in the region from Eburne to the mouth of the Columbia was brought either over the Cascade Mountains or down the Columbia and up the coast.

Fig. 158 ($\frac{16}{7343}$). Chipped Chert Point. ½ nat. size.

Another point, chipped from gray trap ($\frac{16}{7342}$), 75 mm. long, with a tang which meets the side-edges after a concconcave curve, and is itself curved off to a rounded point, and a point chipped from black obsidian ($\frac{16}{7341}$), were also purchased here. The latter is 80 mm. long and roughly leaf-shaped, but the point and base are so nearly alike that one can hardly be distinguished from the other. The chipping is crude. A small part of the surface seems to have been ground, but that is possibly part of the natural surface of a pebble of obsidian, out of which the point was chipped. Obsidian was found by us also at North Saanich; and, further, it will be remembered that a point chipped from obsidian was seen at Port Hammond.[1] Chipped obsidian points were also found by us in the Yakima Valley, but none were seen among archæological finds in the Thompson River region.

Fig. 159 ($\frac{16}{7340}$). Harpoon-Point. ½ nat. size.

Fig. 159 illustrates a harpoon-point made of bone, purchased at Penn Cove. In section it is oval. A small ridge, set out from the shaft by longitudinal grooving on each side, shows at the left. This is notched to its base, and squarely across its edge, at nearly equal intervals. The base is wedge-shaped, and would fit into the split end of a shaft.

Deception Pass.

There is an ancient camp-site at a place on Whidbey Island, locally known as "Brann's Logging Camp No. 10," which is about ten miles inside of Deception Pass, opposite La Conner (probably about Section 22, Township 33, N. of Range 2 E.). The site is level, and extends along the seashore about a quarter of a mile, and from the bluffs to the beach, about 35 metres. There is a fine spring here, and the place is said to have been frequented during historic times by northern Indians, who came on war-expeditions. A specimen from this site is shown in Fig. 195, *a*.

[1] See pp. 142 and 143 of this volume.

San Juan Group.

(*Report by W. H. Thacker.*[1])

[The reconnaissance of the shell-heaps of the San Juan Group was intrusted to Mr. W. H. Thacker of Friday Harbor, who is quite familiar with the archæology of that neighborhood. The arrow-points chipped from stone collected by Mr. Thacker on the San Juan Islands resemble in shape and material those found at Port Hammond and Eburne. A number of the arrow and spear heads were found in cultivating a marsh, presumably an ancient fresh-water lake in the interior of San Juan Island. They represent the finest chipping, in the hard black volcanic rock so common here, that Mr. Thacker has seen. These arrow and spear heads are from 45 mm. to 127 mm. in length, with peculiarly shaped stems, and are much alike. The points, ground out of slate, include both those of lenticular section and those having a section of the form of a flattened hexagon. The points made of bone in this collection include straight slender points and those which are of the shape of an elongated leaf. Some are slender and barbed on one side. One long one made of a deer-rib was found at the ancient shell-heap on the western shore, at the very mouth of Fisherman's Bay on Lopez Island. It is about 230 mm. long, with five barbs on one edge. It appears to have been made with stone implements. One end was apparently pointed on a piece of sandstone; the other is the natural articulation.

Three stone rings with concave edges were found on the San Juan Islands.[2] These resemble the specimens shown in Figs. 22 *b*, 112, 125, and 147. They may have been used as sinkers. One of them, 38 mm. in diameter, 16 mm. thick, was found on the shell-heap on the eastern side of West Sound, Orcas Island.[3] The perforation is about 13 mm. in diameter. The material resembles baked clay.

Mortars made of pebbles are represented in Mr. Thacker's collection by two specimens besides the one shown in Fig. 186, *b*. Pestles are of two kinds. One has a top in the form of a hat, with a conical crown and flat brim; two are of the typical form, having a short striking-head at each end, with faces nearly parallel.

Wedges of rather small size made of antler, many celts of the usual forms, whetstones, some of them worn out like little mortars, and awls made of bone, are all represented in this collection. There is one slender point chipped from stone, apparently a drill, in Mr. Thacker's collection.

A carved figure made of antler (Fig. 194) has a groove along its lower side, and may have been used as a smoother for rush mats such as are found among the Indians of Puget Sound and southern and western Vancouver Island. A carved figure made of stone, from this region, is shown in Fig. 197, *a*.]

The present Indians inhabiting the San Juan group of islands dispose of their dead in the most labor-saving manner possible, unless they were to throw them into the sea. A convenient sand-spit or shell-heap is often used wherein an excavation can be made with little toil.

I have found nothing buried with these remains except their clothes, and perhaps bark mats in which the bodies were wrapped.[4]

The weapons and implements we find about the ancient village sites and camping-places are far inferior in workmanship to those left on the mainland farther to the east and south. The material from which the natives of these islands made their implements is chiefly a black, compact stone, probably volcanic, quite hard, and of uneven and refractory fracture; and this fact may

[1] Mr. Thacker first published some notes on the archæology of the San Juan Group in the American Archæologist, 1898, Vol. II, pp. 49, 97, 187, and 206. These notes have been revised, and used in the following descriptions.

[2] See p. 320. [3] See map. p. 62 of this volume. [4] Thacker, l.c., p. 97.

account in some degree for the apparent want of taste or skill of the native artisans. Of several hundred arrow and spear points found here, that I have had an opportunity to examine, not one was entirely perfect; all are characterized by want of symmetry and finish. However, there are occasionally discovered among the coarse native implements some finely wrought from obsidian, jasper, serpentine, and the closely-grained black "knife-stone," that clearly show a different style of workmanship, and are no doubt of foreign production, having found their way here as reprisals in warfare, or through the channels of trade, for it is well known that all the coast tribes had an extensive system of barter. An evidence of this fact here is the occurrence of ornaments and implements of copper, a metal not found native on these islands, and presumably brought from the north. The best specimen of this class I have seen is a totemic or ceremonial object, approximating a fish in shape, cut from sheet-copper about 3 mm. thick, found on Lopez Island, the second largest of this group. This copper, uniform in thickness, is 70 cm. in length and 6 cm. in width.

Among the native stone weapons of this insular region, a not uncommon class are what seem to have been employed as spear or javelin heads, from 15 cm. to 20 cm. in length, by 2.5 cm. or less in width, and quite thin. They are made of soft gray slate, easily worked, and were apparently formed by rubbing or grinding on sandstone. They are certainly too soft and easily broken for use in war or for killing large game, and probably were intended only for spearing fish and crabs. The chipped spear-points usually found here, of native manufacture, are small, seldom more than 7 cm. or 8 cm. in length by 3 cm. in width, and quite thick and rough, and may have been used either as spear or arrow heads, as occasion required. One of this kind was recently shown me that was found in the skeleton of an elk, on Turtleback Mountain, on Orcas Island, supposed to have caused the animal's death. The bones and antlers of the skeleton were so far decayed that they crumbled to pieces when disturbed.

In cultivating the former marshes, now reclaimed by drainage, there is now and then a beautiful obsidian spear-head brought to light, obtained perhaps from the north, as I am informed that material is found on some of the more northern islands, and lost here in killing the game that frequented these fresh-water lagoons, now converted into our most fertile soil. These intrusive weapons are large and perfect in shape, and of superior workmanship.

On the bank of a little cove mentioned by me in a former paper, jutting in from North Bay on this island (San Juan), is one of the many old village sites where long ago dwelt some of the primitive islanders, as is evidenced by the shell-heap (No. 6) extending along the shore for over two hundred metres. In addition to the bones, — a few of which were submitted to Professor Mercer for identification, — I recently secured the skull of an Indian,

artificially flattened in front, which was exposed by the action of the sea at high tide, in cutting away the accumulated mass of camp débris along with a part of the shore upon which it rests. On the beach below this disintegrated pile of decayed shells, and submerged by the sea at high tide, lie the chips and rejects of an ancient implement-maker's workshop, which was originally located on the bank above high-water line; but the undermining action of the waves washed it down to the sands below the tide-level. In this establishment the only raw material used was the hard black stone before mentioned; and this, when the tide is out, we find scattered about in every stage of manufacture, from masses as large as a person's head, to chips of all sizes and every variety of rejects, up to a few very rudely formed implements, some whole, but the greater number broken. In this rubbish an occasional fragment of a pestle, and now and then a hollowed-out beach-pebble, 12 cm. or 15 cm. in diameter, mortar-like, are found, together with a few small perforated flat pebbles, no doubt designed for sinkers for fish lines or nets. From the paucity of specimens worth preserving, I thought that other collectors had preceded me in this field, and secured everything of value; but I learn that such was not the case, and that I was its discoverer; so we must conclude that the old-time artisans who occupied this shop were poor in material, resources, and skill.

Erosion of the shore-line by the surf has exposed sections of the shell-heap well into its interior, affording a very favorable opportunity for the examination of its contents without the labor of much excavation.

The stone mortars we now and then find here are quite small, and are nothing more than large water-worn pebbles rudely hollowed out, better suited for grinding paints than for reducing dried meat and berries, which were among the most important items of the Indians' food-supply. From the bottom to the top of the shell-heaps here we find only the same rough, ill-shaped arrow and spear points of stone, and occasional implements of bone and of shell, mixed in with shells of the clam and sea-urchins, and bones of different fishes, with those of the raccoon, fox, deer, bear, seal, water-fowls, etc. The question here arises, What relation did these savages, who, to save labor, buried their dead in their shell-refuse, bear to those Indians on these islands who cremated their dead in cemeteries on neighboring heights and headlands, or erected over them mounds enclosing tombs of stone?[1]

The following shell-heaps were examined:[2] —

No. 1. A shell-heap extending about 300 metres along the beach, about 50 metres wide in places, and almost 2 metres high, located on San Juan Island where the S. E. 1/4 of the N. E. 1/4 of Section 26 of Township 36 N. of Range 4 W. (Willamette Meridian) strikes the eastern shore-line of Garrison Bay. The white shell shore-line is plainly seen from a boat, by which means

[1] Thacker, l. c., pp. 187-189.

[2] See map, p. 62 of this volume.

only can it be reached. The place is partly in orchard and meadow; part of the shell-heap has been cut away by the tide; and many artifacts have been found in the talus and on the beach.

No. 2. A shell-heap, now covered by sand, marking an old village-site, extending about 330 metres along the beach, and about 160 metres wide, located on San Juan Island at the north side of Eagle Cove, on Section 11 of Township 34 N. of Range 3 W. (Willamette Meridian). Arrow and spear heads chipped out of black stone or ground out of slate, and perforated stone anchors for canoes, are still frequently seen here, while small stone mortars are sometimes found.

No. 3.[1] A shell-heap extending about 100 metres along the south shore-line of Griffin Bay, about 10 metres wide, and 1 metre in maximum height, which appears very old, located on the fractional N. E. 1/4 of the N. E. 1/4 of Section 7 of Township 34 N. of Range 2 W. (Willamette Meridian). The place is on the United States Military Reservation, and is reached by boat only.

No. 4. A shell-heap on a village site still occupied when the whites first appeared on the island, located on the north side of Mitchell's Bay, on the west coast of San Juan Island, in Section 35 of Township 36 N. of Range 4 W. (Willamette Meridian).

I made a casual examination here. No skeletons were discovered, but a few broken bones that may have been human remains. The composition of this refuse-heap was similar to that on Lopez Island (No. 9), — intermingled with the same kind of animal bones, clam-shells and cockle-shells, and innumerable seaurchin skeletons, all more or less burned and much decomposed. Here, too, inthis old camp-refuse, was a strange absence of implements and utensils of any sort.[2]

No. 5.[1] A shell-heap extending about 200 metres along the south shore-line of the southwest part of Griffin Bay, about 40 metres wide and from 1 metre to 2 metres high, which appears very old, located on Section 7 of Township 34 N. of Range 2 W. (Willamette Meridian), and extending east along the shore from close to where the S. E. corner of Section 1 of Township 34 N. of Range 3 W. touches the bay. The place is on the United States Military Reservation, and is reached by boat only.

No. 6.[1] A shell-heap extending about 300 metres along the shore-line of the north side of a little bay in the north end of North Bay, on San Juan Island, about 60 metres wide in places, and still 1.3 metres high at the highest points, located on the S. W. 1/4 of the S. W. 1/4 of Section 13 of Township 35 N. of Range 3 W. (Willamette Meridian). The place, near which is a spring, has been cultivated for twenty years, and a human skeleton has been washed out by the tide.

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[1] See p. 63 of this volume.

[2] Revised from the account first published by Mr. Thacker in the American Archæologist, 1898, Vol. II, p. 50.

No. 7. A shell-heap extending about 200 metres along the shore-line of the north end of West Sound, on Orcas Island, about 100 metres wide and from 3 metres to 5 metres high, located on the N. W. $^1/_4$ of the N. W. $^1/_4$ of Section 9 of Township 36. N. of Range 2 W. (Willamette Meridian). This shell-deposit is perhaps the most extensive on the archipelago. Many human skeletons have been ploughed out of it. The place is now an orchard and garden. A few of the artifacts seem to be of the style of art found in the Kwakiutl and Haida regions, and were probably secured from those northern Indians or brought here by them.

No. 8. A shell-heap over 200 metres long, 50 metres wide, and from 1 metre to 2.5 metres deep, extending along the north side of the neck of land on the south of McKay's Bay on Section 24 of Township 34 N. of Range 2 W. (Willamette Meridian), Lopez Island. The land is now under cultivation.

No. 9. A small cove at the S. W. $^1/_4$ of the S. E. $^1/_4$ of the S. E. $^1/_4$ of Section 11 of Township 34 N. of Range 2 W. (Willamette Meridian), on Lopez Island, the shore-line of which, above the tide-washed beach, is heaped for more than 100 metres with burnt shells interspersed with bones, ashes, and other camp-refuse, accumulated here in the course of perhaps centuries of time; for it seems to have been a favorite village site of prehistoric as well as of recent Indians.

About a year ago (1897), during the erection of a salmon-cannery, it became necessary to cut a ditch from the water-line through this mass of decayed shells. In the process of this work two skeletons were exhumed, one being that of an Indian, presumably; the other, that of a dog. They had been buried together, and, judging from their appearance and state of decay, they were deposited here at a very remote period. The bones, with the exception of portions of the skull, crumbled away on exposure to the air. The animal's skeleton was that of a medium-sized dog, — possibly wolf, — too large for a fox; and its cranium a little larger, and nose more pointed, than that of a common mongrel. The human remains were probably of a female, small in stature, with the skull not artificially compressed, as is usually the case with skulls of later Indians found here. All appearances indicated conclusively that these bodies had been buried long before contact of natives with the whites. In enlarging the water-ditch this past summer, another human skeleton was found nearer the surface of this shell-heap, in excellent preservation, and evidently a much later interment. It was buried here, no doubt, to save the labor of digging a grave in the surrounding stony soil. The skull of this skeleton, which I secured, was flattened in front, as are, or were, those of recent Flathead Indians, who were quite numerous in this locality half a century ago. The shell-heap mentioned is composed, in the main, of clam and mussel shells of species now found on this coast. Very

few stone implements have been found in this débris. In this vicinity two copper cups, and a thin, fish-shaped ornament of copper, were found, but these objects may have been of later introduction.[1]

No. 10. An ancient shell-heap now nearly washed away, if ever of any considerable extent, on the western shore of the very mouth of Fisherman's Bay.[2]

On a recent visit to Lopez Island, I took the opportunity of briefly examining one of the ancient trenches, several of which are located there, and were apparently constructed for the purpose of fortifying certain points. The place I visited is situated on the southwest side of the island N. W. of S. E. of Section 10 of Township 34 N. of Range 2 W. (Willamette Meridian), and consists of a bluff or headland several acres in area, jutting out somewhat into the water, with what appears to have once been a deep trench cut around its base on the land side. This trench commences on the west side of the bluff at the shore-line, on an almost perpendicular bank 7 metres or more above the water-line at high tide, and, running closely around the base for a distance of 100 metres, intersects the perpendicular wall of rock that forms the eastern side of the headland. The earth and rock thrown out were piled along on the outside of the ditch from the bluff, thus adding materially to its sheltering-capacity. The trench now varies from 0.6 of a metre to 1 metre in depth, and is about 2 metres across at the surface. At one place where the bed-rock comes to the surface, bowlders are laid along the line until the trench is resumed.

At a point on the side of the bluff above the trench, and near where it intersects with the cliff on the east, a little nook makes back a short distance into the bluff, where the rocky background rises somewhat abruptly, forming a kind of miniature canyon, across the front of which appears to have been a wall of rock, which is now indicated by a line of small bowlders extending from side to side. This nook or corner would accommodate a number of persons; and if protected by a covering overhead, such as an awning, they would be completely sheltered from the storms that frequently come in from the Straits of Fuca. This was the only sheltered place on the bluff.

The oldest Indians who lived upon this island when first settled by the whites, claimed to know nothing of the origin of these trenches, not even by tradition. A fir-tree 50 cm. in diameter had grown up on the one I examined, and, judging from its gnarled and weather-beaten condition, it is no doubt more than a century old. An oblong stone cairn is on the outside of the trench from the bluff, and not far from it; and an Indian cemetery occupied the neighboring hill a little to the north.

For whatever purpose this trench was cut, it is run exactly where it should be for the purpose of fortifying the bluff by a rifle-pit, and I can

[1] Revised from Thacker in American Archæologist, 1898, Vol. II, pp. 49 and 50.

[2] Not at the cairns shown in Fig. 1 of this volume, but near that place.

conceive of no other purpose for which it could be used or constructed; and no better place could have been selected on that part of the island as a point of defence against a superior force, with so little labor, and at the same time hold so many advantages. The 100 metre trench connecting the perpendicular shore-line on the west with the rock-wall of the bluffs on the east, fortifies the land side, while its precipitous character fronting the water renders the place so nearly inaccessible that a few men could defend it against ten times their number.

I found no evidence of burial inside the trench or in the fortified ground, nor any place indicating a water-supply, though it may have existed, — the one thing lacking to make this point an ideal fort, as the occupants could catch fish from the precipitous rocks on the water-front, and stand an almost unlimited siege, if they had water.[1]

There is a far more interesting trench and embankment on the S. E. of the N. E. of Section 13 of Township 34 N. of Range 2 W. (Willamette Meridian). This extends in a semicircle connecting one part of the seashore with another. The place is on the north shore of McKay's Bay, near the southern end of Lopez Island.

I have been told that the best fortified point on the San Juan Archipelago is near the cairns shown on the map (p. 62) on the N. E. of the N. W. of Section 7 of Township 34 N. of Range 1 W. (Willamette Meridian). The trench is about 100 metres long, from 3 metres to 5 metres wide, and from 1.3 metres to 2 metres deep. It protects a narrow neck of water that makes in from Hunter's Bay and broadens into a harbor, at the head of which is a spring. In front of this fortification the land is level for a short distance. The fortification is on the bluff, which rises abruptly from this nearly flat beach-land.

A trench and embankment are located on the extreme western part of San Juan Island. They extend across a point which forms a semicircle and cuts off the extreme N. W. fractional part of the N. E. $^1/_4$ of Section 26 of Township 36 N. of Range 4 W. (Willamette Meridian). The trench is now somewhat filled with débris.

The cairns of this region have been discussed on pp. 57, 61, 62, of this volume. Specimens from Neah Bay are shown in Figs. 166 *a*, 167 *c*, and 168 *b*. Cairns are reported at Port Angeles.[2]

New Dungeness.

Along the western shore of the little spit which makes out from old New Dungeness is a shell-heap 1 metre high; and on the middle of this spit, connecting with this shell-heap, are several rectangular depressions surrounded by embankments made up of shell-heap material. These were evidently house sites. One of them measured 25 metres long by 10 metres wide, the sides

[1] Revised from Thacker, American Archæologist, 1898, Vol. II, pp. 206, 207.

[2] See p. 58 fo this volume.

of this house site being parallel with the beaches of the spit. A skeleton was found near the centre of the inner edge of the western embankment of one of these house sites. It rested on its right side, with the head toward the southeast, and with the legs and arms flexed. Below the layer of surface-soil the shell-heap material down to this skeleton was not stratified, and consequently the burial may have been intrusive.

At the base of the spit, immediately below the bluff upon which old New Dungeness is located, is a rather extensive shell-heap, which in places is from 2 metres to 3 metres high.

Along the edge of the bluff for a considerable distance, where it overlooks the low land between old New Dungeness and the Dungeness River, is a shell-heap which averages about 30 cm. in height.

Modern Indian box-burials were observed in the trees on the edge of the bluff overlooking the water near the western end of this shell-heap; and modern burials in the sand — several being grouped together, and each group covered by an A-shaped hut made of boards fastened together with iron nails — were examined on the end of the spit which makes southward toward this bluff from the long spit which encloses New Dungeness Bay.

About a quarter of a mile southwest of the Post-Office at New Dungeness, and on what seems to be the bank of a former mouth of the Dungeness River, before the formation of the lower land to the north, is a shell-heap from 2 metres to 3 metres high. — On the side of the slough, about three-quarters of a mile east of New Dungeness, on the low land about one-eighth of a mile back from the beach, is a shell-heap from 1.5 metres to 2 metres high. — About the same distance east of New Dungeness is another shell-heap only about 30 cm. high.

The shells found in the shell-heaps near New Dungeness include those of *Mytilus edulis* Linnæus, *Cardium nuttalli* Conrad, *Purpura crispata* Chemnitz, and *Triton oregonense* Redf. ($\frac{16}{7579}$). Spines of the sea-urchin ($\frac{16}{7584}$) were frequently found in the layers. Shells of dentalia (*Dentalium pretiosum* Nuttalli) ($\frac{16}{7595}$) were found in the recent graves; and those of *Hinnites giganteus* Gray, in the shell-heaps. Ornaments made of haliotis shell ($\frac{16}{7596}$, $\frac{16}{7597}$, $\frac{16}{7598}$ *a*, *b*) were found in the recent graves. Three skulls and some bones of dogs ($\frac{16}{7552}$, $\frac{16}{7588}$, $\frac{16}{7589}$) were found. The first was partly burned.

Bones of the whale, sea-lion, and skunk, the skull of a murre ($\frac{16}{7582}$), fish-bones, a whale's tooth, a piece of antler, the incisor of an elk ($\frac{16}{7546}$), and a claw of a feline ($\frac{16}{7547}$), were found here; also some splinters of very large long bones, apparently broken to get the marrow for food or grease or to obtain material for tools. A concretion of chalcedony was collected.

Sixteen simple points made of bone, of which three are clearly splinters of bird-bones, were found here. Fifteen are sharpened at both ends; and of these, thirteen are pointed, while two are wedge-shaped at the base. The sixteenth has

merely the broken end of the bone for its base. Some are mere splinters sharpened at the ends, others are well rounded. They vary from 27 mm. to 71 mm. in length, and were probably used as fish-rake teeth or as points of fish-harpoons.

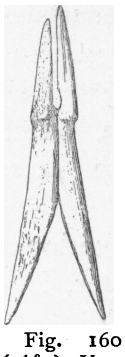

Fig. 160 ($\frac{16}{1519}$). Harpoon-Barbs. $\frac{1}{2}$ nat. size.

Seven barbs made of bone were found. They are similar in general to the type found at Comox, Port Hammond, Saanich, and Stanwood, and described before.[1] All have grooves for receiving the spear-shaft. Six were made for flat blades, one for a nail-shaped blade. They vary from 33 mm. to 85 mm. in length. Fig. 160 illustrates two of these barbs made of bone. Across one of the surfaces in the blade-slit is a notch, which could have been used to receive a flange in the point, and thus keep it from slipping out. These barbs were found with the skeletons of a woman and a child ($\frac{99}{2722}$), near New Dungeness, Wash., on the south branch of the large spit. As some of the graves here were covered with boards nailed together with iron nails, it seems possible that these two barbs are not very old; on the other hand, every object found in this particular grave was of native manufacture.

Seven large simple points made of bone were found. Two of these are shown in Fig. 161, *a*, *b*. All were made of pieces of long bone. They vary from 79 mm. to 201 mm. in length. Like the small simple points made of bone, some are mere splinters sharpened at each end and somewhat smoothed on the edges; others are well rounded. The points are more acute than the bases.

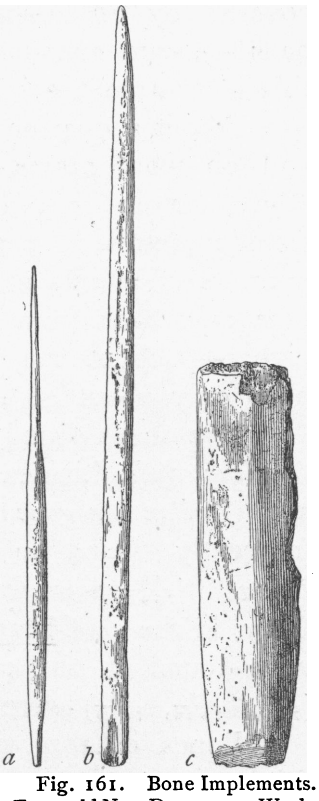

Fig. 161. Bone Implements. From old New Dungeness, Wash. $\frac{1}{2}$ nat. size.
a ($\frac{16}{1511}$); *b* ($\frac{16}{1513}$), Bone points; *c* ($\frac{16}{1508}$), Wedge or chisel.

Fragments of eight barbed harpoon-points made of bone were found. Some must have been 200 mm. long, others only about 70 mm. Seven of them have the base complete enough to show that they were wedge-shaped. The method of cutting the barbs is the same as in the specimens from Comox and farther south, described in the preceding pages.[2]

Twenty-one wedges made of antler were found here, of which two are charred and two are sliced off chiefly from the convex side, one from the concave side. Two are sliced off entirely from one side. They vary from 81 mm. to 186 mm. in length. One of the wedges has its natural point, or at least has been but slightly smoothed all around the point. It is battered and slivered on the top. Another one consists of a piece (about half) of an antler.

[1] See pp. 148, 309, 335, and 374; also Vol. I, p. 251, and James G. Swan, Indians of Cape Flattery, Fig. 4, p. 20.
[2] Cf. Figs. 16 *c* (p. 149) and 123 *c*.

The central part is hollowed out; the edges are smoothed; the top is battered and slivered; the point is broken off and slivered up the natural side.

A piece of antler ($\frac{16}{7505}$) found on the surface, half a mile east of New Dungeness, is cut down on one side somewhat like a wedge; but the direction of the slice is much more concave, and the edges are cut off at an angle with the sliced-off surface about equal to the angle that they form with the outer surface of the antler. The tip is broken off. The base consists of a part where the antler divided into two prongs. These have been cut around and broken off.

Six wedges or chisels made from splinters of long bones were found. Five are sharpened from each side to a chisel-like edge by a short bevelled surface. One of these is shown in Fig. 161, *c*. Two of these five are battered on the top. The other three may have been driven, but do not show any signs of it. One of them has the articular surface for a top. The sixth of these has a sharp dagger-like point.

One hammer or pestle made of a close-grained tough heavy bluish-gray stone ($\frac{16}{7600}$) was found. It is of the typical form with two striking-heads, one greater in diameter than the other. The faces of these are slightly convex. Both heads are short, and both have a greater diameter where they meet the body than at their faces. The body is nearly circular in section, and enlarges slightly from the small head to the large one.

One celt made of serpentine ($\frac{16}{7506}$) was found on the surface of the bluff a quarter of a mile west of New Dungeness. It is made of dark-colored serpentine. Parts of the wide grooves by means of which the side-edges were weakened for breaking out the piece for the celt show on each side of the edges. The broken surfaces between these are rubbed smooth. The cutting-edge and one side are broken off along the lines of natural cleavage of the stone. The top was slightly rounded off, but remains somewhat square.

Nine whetstones or grinders made of thin pieces of sandstone were found. All but one were used on both sides. Some are of fine-grained stone, others of coarse material. Some of the edges are more or less rounded by erosion; others are rather clean breaks.

Eighteen awls or awl-like objects were found. Eight are sharpened splinters of bone, one being a sharpened fragment of a larger polished bone object; and one is a sharpened splinter that has been revolved, so that part of the point is smaller than other parts nearer the tip. The remaining six, made from splinters, are smoothed more or less on the sides and side-edges; four of them are cut across the base quite squarely, one being the articular end of the bone, and one had been grooved around the four sides, broken off, and then squared across the broken edge. The points of two of these six are somewhat flat, while the other four are rounded in cross-section. Another awl is slender, curved, oval in cross-section, and has a flat point and a broken base. Two of the awls are made of ulnæ. One of these has

a chisel-like point; the other, a rather flat point. The remaining seven awls are made of slender, hollow bird-bones. Four of these are small; and while two retain the articular end of the bone, two are broken off just above it. These are sharpened by a long cut diagonally across the point, are more or less polished from use, and closely resemble those shown in Figs. 35, *d*, *e*, and 108.[1] Three are of larger bird-bones; one being broken off at both the base and the tip, and two having two notches side by side in one side (the left, as the awl is held with the sliced surface up and pointing away from the observer) of the point near the tip. These notches are rounded and smoothed. The articular end of one of them is broken off.

Besides these eighteen awls, eleven bone awls with handles were found here, one of which is shown in Fig. 162. They are made of two hollow bird-bones, — one small and slender, set in another, wider one, a wing-bone, with both ends broken off irregularly. Strangely enough, these handles show no signs of wear, although some of them are slightly polished on the more exposed parts. The lower end of one of the points is crushed from forcing it into the handle. They vary from 59 mm. to 183 mm. in length. It seems worthy of note that none of this type with handles were found either in the shell-heaps of the Fraser Delta or at Comox, Saanich, or Victoria, although so frequently found at Dungeness and Port Williams.

Fig. 162 ($\frac{16}{7498}$ a). Bone Awl with Handle. From old New Dungeness, Wash. ½ nat. size.

Port Williams.

A number of modern graves in the sand, which were covered with small A-shaped huts, were located on the point of the spit which makes out from the western side of the entrance to Sequim Bay.

A shell-heap is located south of the second spit which makes out from the western side of the mouth of Sequim Bay, from a point opposite a break in the bluff-line where this line approaches close to the shore, and about a mile south of Port Williams Post-Office. This site is immediately south of the old Port Washington wharf, and near a small Indian village. The heap is about 1.5 metres high, extends along the bay-shore some 120 metres, and back about 30 metres.

An earth-work is located about a mile and a half south of Port Williams Post-Office, or approximately a half-mile south of the shell-heap previously mentioned, and on top of a bluff extending north and south along the western side of Sequim Bay. The place is about eight miles from New Dungeness. The earthwork consists of a trench, V-shaped in section, which extends back from the edge of the high bluff in a somewhat semicircular line of about 20 metres radius, and meets the bluff-line again. The trench averages about 1.2 metres in depth. On both sides of it are low rounded embankments

[1] See pp. 317, 347; and cf. pp. 172, 371, and 378.

about 0.6 of a metre in height, and evidently made up of the earth taken from the ditch. The largest tree on the artificial part of the enclosure was situated on one of these ridges, and was about 45 cm. in diameter. An old settler living near this place said that the Indians occupied this earth-work as a fort about 1860.

A shell-heap is located about two miles south of Port Williams, or half a mile south of the earth-work. It extends westerly from the mouth of a little creek on a point, to a small bay perhaps a quarter of a mile distant. This heap reaches a maximum height of about 2 metres. The skull of a dog ($\frac{16}{7643}$) was found in this heap.

Nine small simple points made of bone were found. They vary from 27 mm. to 74 mm. in length, and all are made from splinters of long bones of mammals, with the exception of the smallest, which is made of a splinter of a long bone of a bird. It is rather flat, and has a wedge-shaped base. The longest and three others are pointed at both ends. The remaining four are merely splinters of bones sharpened, and more or less smoothed on the edges.

Three barbs were found in the large shell-heap here, two of them ($\frac{16}{7616}$) being grooved for the reception of bone points. The backs are rounded, and the barb ends have fine transverse incisions on each side, apparently for decorative purposes. They are 50 mm. long. The third specimen ($\frac{16}{7646}$) was found 1.3 metres deep. It has a long flat cut for the insertion of a slate or bone blade. There are marks of disintegration, indicating that the blade was held in place by string wound around the point of the barb.

A fragment (probably about half) of a large point ($\frac{16}{7647}$) was found 1.3 metres deep in the same shell-heap. It is 96 mm. long, made of firm bone, oval in section, and polished from use or disintegration.

Fragments of four barbed harpoon-points made of bone were found. Two were fine, two coarse. Two show the bases to have been wedge-shaped, and one of these bases has been pointed also. The barb left on the piece with the wedge-shaped base is undercut by a groove, which extends up on to the sides, and projects down at an angle of about 30° from the shaft. There are three notches across the edge between the barb and the base. The piece with the pointed base has a groove cut near the edge on each side, from which the first notch was cut, and probably the other barbs were made by notching back to these grooves, which leave a thin projection to the edge from the main part of the shaft, such as is seen in Fig. 16, *c*,[1] p. 149 of this volume. Another point is long and slender, triangular in section, and barbed in the same way by cutting directly across a ridge left between two grooves, one on each side. Across the edge of the barb, above the notch, are two incisions, which may have been made for decorative purposes. The object is broken off below the notch.

[1] See also pp. 310, 374, 388, and Figs. 123 *c*, 159.

A lath-shaped piece of a long bone, 168 mm. in length ($\frac{16}{7631}$) found in the large shell-heap, somewhat resembles the skin-scrapers found in the Thompson River region[1] and similar objects found in the Lower Fraser region,[2] but such skin-scrapers do not seem to be common on the coast. Moreover, this piece is short, thin, and of about the right length and cross-section to make into a barbed harpoon-point by cutting notches across its thin edge; and the base is already wedge-shaped, like the base of such a point. It has been cut out by grooving longitudinally, and both sides are smoothed off. The convex side shows transverse striations. The back edge is rounded, and the front is sharp.

A fragment (about half) of the top of a pestle of the type with two striking-heads ($\frac{16}{7648}$) was found in a modern grave on the spit. The top has a concave face, the head is of greater diameter where it joins the body than at the face, and the edges are somewhat rounded. The body is circular in section, and expands toward the base. The material is a hard tough rock of grayish-blue color, apparently serpentine. The object is daubed with blue paint.

Eight wedges made of antler were found here. They vary from 88 mm. to 209 mm. in length. All that are not broken off at the top are battered and slivered. Three are bevelled off about equally from each side; three are sliced off almost entirely from the convex side; and two are evidently repointed split wedges, since the broken side is smoothed. These are the only examples that we have found of split wedges being smoothed on the broken surface for further use. The top of one of the wedges has been burned off.

Some pieces of antler were found which show that the cutting of antler was principally done by hacking. One of them ($\frac{16}{7602}$), found on the surface two miles south of Port Williams, shows distinct marks of a blade, about 8 mm. wide, which produced striations on the chip-marks.

A fragment of a celt ($\frac{16}{7603}$) was found on the surface about two miles south of Port Williams. The poll is broken obliquely off. The side-edges are square, the sides nearly flat, but the rounding of the sides to the edges makes the blade somewhat oval in cross-section. The cutting-edge is convex, and sharpened a very little more from one side than from the other. This is an unusually wide and proportionately thin celt, being 71 mm. wide by 16 mm. thick.

Four pieces of sandstone, some coarse, others fine, that were used for whetstones, were found near Port Williams. Three show one or more edges weathered, and all have one or more edges worn, while two have fresh breaks on one edge. Some are thick, others thin. Two are ground on both sides, two on one side only.

Four awls made of bone, and three objects (probably) awls, each made of two long bones of birds, were found in the large shell-heap here. The first awl ($\frac{16}{7638}$), found 60 cm. deep, is a mere splinter of a large long bone

[1] Cf. Vol. I, Fig. 65, p. 147.

[2] Cf. Fig. 34, p. 170 of this volume.

sharpened at one end; the second ($\frac{16}{7618}$) is similar, but made of a thin bone, probably that of a bird; and the third ($\frac{16}{7617}$) is a small bone of a mammal, with the articular end remaining, and in such a way as to form a convenient handle, while the other end is sharpened; but the marrow-canal opens in the sharpened part to one side of the tip, with a very small opening. The fourth ($\frac{16}{7629}$), found 30 cm. deep, is similar to the last-mentioned, but is made of a bird-bone, and hence the opening is large. This awl resembles those from shell-heaps of the Lower Fraser and Comox, shown in Fig. 35 *d*, *e* (p. 171) and Fig. 108 (p. 317), and those from the shell-heaps at Saanich and New Dungeness, mentioned on pp. 347 and 390.

Three specimens made by combining two long bones of birds ($\frac{16}{7626}$, *a*, *b*, $\frac{16}{7637}$), found in the large shell-heap, are made up of one bone broken off at both ends, with a similar smaller bone inserted in one end of it. The end of the little bone in the first and third case here mentioned, and usually in objects of this class, is broken off obliquely, like the ends of awls made of bird-bones.[1] They vary in length from 72 mm. to 128 mm. The end of the small bone in the last-named specimen is somewhat smoothed, like the ends of the awls made of bird-bones previously mentioned.

For warfare, clubs made of bone of the whale were used, as is shown by a fragment of the end of one of these ($\frac{16}{7642}$), found 1 metre deep in the large shell-heap. It is lenticular in section. The sides expand to near the end, and then contract to a rounded point, so that this end of the object is somewhat lanceolate. One side is plain; the other bears faint traces of a median design.

Port Madison.

There is a shell-heap, apparently over 100 metres long by at least 5 metres wide, and reaching a height of about 2 metres, directly west from Port Madison, about 125 metres distant, and on the opposite side of the harbor.

Point Agate.

At Point Agate we saw a small collection owned by an old French Indian trader. In his collection was a disk-shaped stone, perforated in the middle, evidently a net-sinker;[2] a bone awl; and a stone pestle with a long striking-head, tapering body, and a top similar to the pestles with hat-shaped tops, but having no nipple. A stone sculpture from Seattle is shown in Fig. 198, *a*.

Burton.

Near Burton, on Vashon Island, are several shell-heaps. One is located along the shore, just above the reach of high tide, about a quarter of a mile

[1] See Figs. 35, *d*, *e* (p. 171), 108 (p. 317); pp. 172, 347, 378, 390, and 392; and Vol. I, Fig. 357, *c*, p. 420; cf. also Fig. 162, p. 390.

[2] Cf. Figs. 22 *b*, (p. 155), 112, 125, 147.

east of the Burton wharf (Section 20 of Township 22 N. of Range 3 E., Willamette Meridian). It is nearly a quarter of a mile long, and averages 30 cm. in height.[1]

North of Burton wharf, on the south side of the bay which makes in from Quartermaster Harbor, a shell-heap is located on the low land of the north side of the narrow neck upon which the village of Burton is built. It is being cut into by the surf when the tide is high (S. E. $^1/_4$ of the S. E. $^1/_4$ of Section 18 of Township 22 N. of Range 3 E., Willamette Meridian). Across part of this heap we cut a large trench, which showed it to be slightly over 1.5 metres high, and to be composed of a dark-gray mass made up of about equal quantities of shell and soil, with a little ash. The shell material is broken and decomposed almost as much as in the shell-heaps of the Lower Fraser; the strata are not thick, but are distinct enough to show well in a photograph of a part of the section.

North of Burton wharf, at intervals along the west shore of the bay, shell-heaps are located on the top of the bluff, the base of which is washed by the surf (Section 18 of Township 22 N. of Range 3 E., Willamette Meridian). We caved off the face of the bluff on which one of these heaps stood, and found part of that heap to be over 1.2 metres high, and to be composed of a yellowish mass made up largely of shell, with a considerable amount of ash. The shells were rather well preserved, although many of them were burned. The shells of the oyster were more frequently found here than usual. A small point chipped from agate was secured, which closely resembles the famous "bird-points" from the Columbia Valley.

At the northwestern part of Quartermaster Harbor a small stream, Judd Creek, enters the bay. Its southern bank is high; but the northern side is low, and is bordered by a shell-heap, which, although it runs out occasionally, extends along the shore of the northern side of the bay, and its base is washed by the sea at high tide (Sections 8, 17, and 18 of Township 22 N. of Range 3 E., Willamette Meridian).

I was directed by Judge James Wickersham to a shell-heap on the portage at the northeastern side of Quartermaster Harbor, near the base of the wharf extending northeastward into Tramp Harbor of Admiralty Inlet (Section 9 of Township 22 N. of Range 3 E., Willamette Meridian).

In none of the shell-heaps on or near Quartermaster Harbor did we find any points or fish-knives rubbed out of slate.

The shells found in the shell-heaps near Burton include those of *Tresus nuttalli* Conrad, *Saxidomus nuttalli* Conrad, *Tapes staminea* Conrad, *Mytilus edulis* Linnæus, *Ostrea lurida* Carpenter, *Cardium nuttalli* Conrad, *Purpura crispata* Chemnitz, *Polynices* (*Lunatia*) *lewisii* Gould, *Acmæa pelta* Esch.,

[1] This town of Burton must not be confused with the Burton on Wallochet Bay (Sections 29 and 30 o Township 21 N. of Range 2 E., Willamette Meridian).

Nassa perpinguis Gould, and barnacles. Shells of land-snails (*Lysinoe infumata* Gould) were found, which may have crawled into the shell-heap. Shells of the cake-urchin, sea-cake, biscuit-urchin or "sand-dollar" (*Echinarachnius excentricus* Val.), were frequently found in the layers. Some barnacles and oyster-shells, being attached to the inner side of certain of the clam-shells, show that the latter had died before leaving the sea. Shells of *Pecten caurinus* Gould were found in the shell-heaps. Charcoal ($\frac{16}{7689}$) of the desert willow (*Chilopsis linearis* D. C.) was found 1 metre deep in one shell-heap. Bones of food-animals, including those of Steller's sea-lion (*Eumetopias stelleri*), the deer, birds, and fish, antlers, and a tooth of the killer whale, were found in the shell-heaps here. Certain bones were stained a bluish green, which did not react to a test for copper.

Besides the small triangular point ($\frac{16}{7693}$), chipped from agate and burned, mentioned on p. 394 as closely resembling the famous "bird-points" from the Columbia Valley, and found in one of the shell-heaps, we collected seven specimens showing chipping. All but one of these are of jasper, chert, or chalcedony of the bright colors characteristic of the material used for chipped implements in the Yakima Valley, and much brighter in color than the material usually found in the Thompson River region or the Lower Fraser Valley. Three of the pieces are of red jasper; two, of waxy, variegated white to pink chalcedony; one, of waxy light-brown chalcedony; and one, of argillite. Two are apparently points for arrows; three, scrapers; one is a chip; and the last a chipped fragment.

One among these, is a small chip of red jasper ($\frac{16}{7651}$) found on the beach of Quartermaster Harbor west of the portage. This is chipped on the convex side of its curved edge, like a small scraper. A crudely chipped leaf-shaped form of red jasper ($\frac{16}{7661}$) was found 7.5 cm. deep. It was apparently made from a pebble, but from one not water-worn enough to efface fractured surfaces. In the same heap was found a small triangular piece of variegated yellow, pink, and white chalcedony, apparently part of a scraper or small crudely chipped point; in fact, it resembles a barb from a larger point, with the broken surface re-chipped for a scraper.

A chip of variegated white to pink chalcedony ($\frac{16}{7692}$) was found on a shell-heap. A crudely leaf-shaped chipped point of variegated red jasper ($\frac{16}{7741}$) was found 60 cm. deep. It is somewhat warped in shape, as well as asymmetrical. A chipped scraper of circular form, made of waxy brown chalcedony ($\frac{16}{7740}$), was found in the heap; as was also a piece of chipped argillite ($\frac{16}{7742}$).

Of points made of bone, nine small, three large, and one unfinished specimen, one barb and one barbed harpoon-point, were found here. Only one of the small simple points ($\frac{16}{7705}$) was seen. It is 56 mm. long, and resembles in form the points of this type found in the Thompson River region

and in the Lower Fraser Valley.[1] Seven of the small points are mere splinters of bone, more or less rounded and sharpened, only two of them being worked so much as to have the base wedge-shaped. Another specimen ($\frac{16}{7672}$) is broken off at the base, and may have been much longer. It resembles the point found at Port Hammond shown in Fig. 14, *a*, p. 147 of this volume.

Only one of the three large points is entire; one of them lacking the base, and the other, both the point and the tip of the base. All, however, seem to be practically of the same type, of which the unbroken specimen ($\frac{16}{7663}$) shows perhaps the best technique. It is oval or nearly circular in section, being slightly smaller at the base than at its middle, and was made from the wall of a large, heavy, long bone, a portion of a natural groove showing near the base, which is cut nearly square across. It is 246 mm. long. A similar point was found near Stanwood, and is shown in Fig. 155. The unfinished specimen ($\frac{16}{7714}$) is merely a warped bar of bone with bulging sides and edges, and somewhat square at each end, one of which is quite small, and larger at the middle than at the base.

The barb ($\frac{16}{7709}$) resembles those found at Dungeness (Fig. 160) and in the Lower Fraser Valley,[2] except that the groove extends from the base nearly to the point, it being perhaps the simplest form of this sort of barb that I have seen. The absence of a groove or flat notch in the tip suggests that the points of two such objects served for the harpoon-point; but possibly a flat blade was inserted between them, although the distance, 6 mm. from the groove to the point, seems insufficient for this purpose. It is 56 mm. long.

The barbed harpoon-point $\frac{16}{7717}$ has four somewhat irregular facets at the tip, and the basal part is broken off close below a barb, so that it is impossible to determine how many barbs it originally possessed. The shaft is rather slender. The outer edges of the five remaining barbs are concave. They are undercut from both sides and at an angle of about 45°. Longitudinal striations show on the shaft.

A fragment of the handle of a digging-stick made of antler, and broken through the perforation in which the stick was inserted ($\frac{16}{7700}$ a), was found. The perforation was nearly circular, and apparently of about the same diameter at one side as at the other. It is decorated by a band of two complete and one incomplete parallel incised lines, which encircle it near the hole. This is the only handle of a digging-stick which I have seen among archæological finds in the region from Comox to Olympia; but the object shown in Fig. 59, p. 187 of this volume, may have been such a handle.[3] Such handles were numerous in the Thompson River region.[4]

A fragment of a hammer or pestle made of stone, and having a rounded

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[1] See Vol. I, Fig. 336, *a* p. 410; and Fig. 13, *h*, p. 145 of this volume.

[2] See Fig. 15, p. 148 of this volume.

[3] Cf. p. 156 of this volume.

[4] Cf. Vol. I, Fig. 21, (p. 137), and pp. 137, 138, 156, 231, 411.

knob-shaped top and tapering body, was seen in a collection owned by Mr. Judd on Judd Creek. The striking-head was missing; but Mr. Judd said it was of cylindrical form, and its length was nearly as great as its diameter. Besides this, we collected a fragment ($\frac{16}{7655}$) on the surface of the beach near Burton. It is sufficiently large to show that the striking-head was convex in outline, about 30 mm. long, and of a greater diameter at the top than at the striking-face; also that the striking-face was very concave, showing that the object had been used as a hammer to drive wedges. The body flared out to meet the striking-head. The stone is rather soft, and of greenish color.

One disk-shaped pebble, somewhat flattened on each side ($\frac{16}{7656}$), was found on the surface of the beach. It is apparently an anvil or lap-stone upon which to pound or crush.

Sixteen wedges made of elk-antler were found here; and all but one, apparently an unfinished specimen, are battered on the top. They vary in length from 50 mm. to 206 mm. Eleven are straight, and nine of these are sliced off from one side; one is so broken that the edge cannot be determined; and one is sliced off from both sides, but more from one side than from the other. Four are curved, and these are longer than the straight wedges, and sliced off more from the convex side than from the other. Two of them are bevelled off somewhat around the top, apparently so that the blow would fall upon the central portion, and not split off the edges. Another specimen is not sharpened, but is a natural prong which has been cut off and battered. A piece is split off from one side of the top, apparently by battering. This split and battered end suggests that prongs not artificially sharpened were sometimes used as wedges.

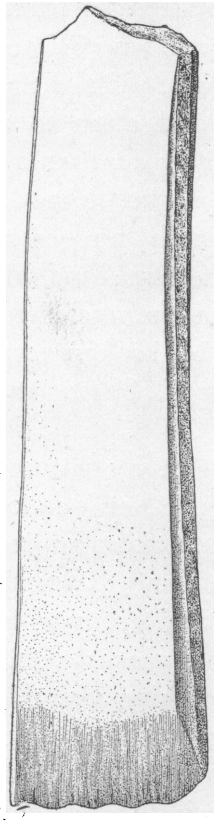


Fig. 163. Serpentine Celt. ½ nat. size.

Fig. 163 illustrates a celt in the Judd collection, made of serpentine. It was found on the surface here. Holding it with the most bevelled side of the sharp edge up, and toward the observer, at the right side may be seen the concave longitudinal grooves by means of which the piece from which it was made was partly cut through before being broken off. The concavity of this groove proves that it was not cut with a string and sand, but by some such means as a piece of sandstone,[1] or wood with sand and water, or by some similar ploughing or grinding method. One example of a sandstone which could have been used for this purpose was found. The sharp edge of this celt presents an unusual appearance, furrows extending across it and up on to the side of the celt. These may have been made by cutting soft wood,

[1] Cf. Fig. 47 (p. 143), and Vol. I, p. 416; see also pp. 164, 167, 377, 398.

which would wear away the softer parts of the stone while polishing over the whole surface of the bevel.

Longitudinal sections of two celt-hafts made of antler ($\frac{16}{7750}$) were found in one of the shell-heaps. Both are bevelled off more at the lower end than at the upper one, and both have the cells of antler crushed at the upper end, as if from being pounded. Judging from the fragments, each haft had a fairly large oval hole in both ends. One has a smooth pit about 5 mm. wide by 4 mm. deep, which is somewhat longer than it is wide, located about 25 mm. from the lower end, in the middle of one side; but the broken edge of the fragment cuts across this pit in such a way that it is impossible to determine how long it was. It may be compared with a somewhat similar pit in a celt-haft found 75 cm. deep in Shell-heap No. 5, at Stanwood, and described on p. 377.

Fifteen flat fragments of sandstone, thought to have been used as whetstones, were found in the shell-heaps near Burton. These vary in length from 65 mm. to 210 mm., and in thickness from 8 mm. to 19 mm. They are all whetted more or less, some on one side, some on both, and often to a fine polish. None show wide grooves, such as might be made by sharpening celts or adzes; nor do any show the narrow grooves, such as might be made in sharpening awls, although they were probably used for both purposes. Some are of coarse, other of fine sandstone of granular structure; and all were evidently chosen because of the grit. Pieces seem to have been selected which were thin-bedded, evidently either because they could be broken into convenient sizes, or because these pieces were handy for use. Some are slightly worn, as if by handling and rubbing against other tools; while in some cases they have been made from fragments somewhat worn by nature, probably by the surf; others are cleanly broken at the edges. Not one of the pieces was rubbed on the edge, as if to trim it to a plane at right angles to the sides; but one ($\frac{16}{7744}$) is rounded on the two side-edges, and is longitudinally striated on one of these, as if possibly used in cutting grooves in serpentine, nephrite, or other rock, preparatory to breaking it into pieces along the line of the grooves. Probably such a cutter was used in making the celt shown in Fig. 163. These stones were evidently used for grinding and sharpening bone and stone implements, etc. Most of them are or seem altogether too small to have been used as anvils upon which to crush or grind food, medicine, or paint. Besides these, a number of similar gritstones, that were evidently used as grindstones upon which to sharpen celts, bone implements, and similar tools, were seen in the Judd collection.

The end of an upper right incisor of a beaver, with the cutting-edge bevelled back and sharpened, and showing transverse striations, as from rubbing on a whetstone ($\frac{16}{7665}$), and a bone around which are fine incised cuts ($\frac{16}{7754}$), were found.

Three awls occurred here. One ($\frac{16}{7674}$) is a mere sharpened splinter of a large thick bone. Another ($\frac{16}{7704}$) is similar; but the shaft is rounded, the base rubbed on the sides, edges, and end, and the point is broken. The third ($\frac{16}{7701}$) is made of a tarsus bone of an ungulate, the articular surface being left to serve as a handle. One side of the shaft is cut away from near the end, and the edges of the awl-like remainder are smoothed; the whole shaft being pointed and smoothed, but the point broken off.

Two fragments of heavy long bones ($\frac{16}{7720}$, $\frac{16}{7708}$) were found. Both are apparently longitudinal fragments (about half) broken from the lower end of dagger-like objects resembling the one found at Saanich (shown in Fig. 136), and both have an oblique edge sharpened from both sides by bevelling; but in the case of the former, the bevel on each side is about equal, while in the latter it is short from the outer or convex surface, and long from the side of the marrow-canal. Stone war-clubs from Burton are shown in Figs. 175 *d*, 177 *b*, and 181 *b*.

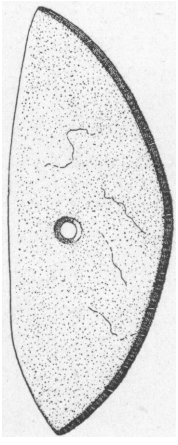


Fig. 164. Slate Tablet. ½ nat. size.

Fig. 164 illustrates a flat boat-shaped slate tablet, pointed at both ends, and with one edge somewhat more curved than the other, about 6 mm. thick, with a perforation through it a little toward the less-curved edge from the middle. Across the more convex edge are ten incisions. This object, which is illustrated from a sketch by Mr. Westlake, is in the Judd collection, and is said to have been found near Burton. It seems to be foreign to the general type of artifacts of the Northwest coast, and it closely resembles the perforated slate tablets or gorgets of the eastern United States, and, like the slate specimen from the Lummi Indian Reservation shown in Fig. 154, may have come from the east.

PUYALLUP.

A shell-heap at least 1 metre high by 15 metres wide is located near the western end of the bridge over the Puyallup River, and directly north of the school on the Puyallup Indian Reservation near Tacoma. Tree-stumps at least 45 cm. in diameter, standing on this heap, suggest for it a considerable age. The road leading from Tacoma to Puyallup, which crosses the bridge here, cuts through this shell-heap, exposing a small section. The shell and soil material appears to be the same as in the shell-heap at Steilacoom,[1] except for a larger proportion of scallop-shells; that is, the heap is composed of a great quantity of ashes, charcoal, and black earth, some burned and crackled stones, numbers of clam and mussel shells, a few shells of other sorts, an occasional animal bone, and rarely an artifact.

[1] See p. 401.

Gig Harbor.

At Gig Harbor, near Tacoma, is a shell-heap which extends about a quarter of a mile along the beach on both sides of the little creek at the head of the harbor. The surf has cut a vertical section of this heap along much of its water-front. To the east of the creek it is thin, reaching a maximum height of only 60 cm., and averaging only 20 cm. in height by about 4 metres in width, with occasional breaks. To the west of the creek, on slightly higher land, it is thicker, reaching a maximum height of about 1.2 metres, about 10 metres wide, and much more continuous. On the latter part stand large tree-stumps, proving that it is of considerable antiquity.

We found many burned and crackled stones washed out by the surf, and we noted that scallop and mussel shells were present among those of the clam and other shell-fish. There was also considerable black soil in the layers here, and the shell and soil composition of the heap reminded us of that at Comox.[1] The people of the vicinity have secured some artifacts at this place, but we found only one flake from a pebble ($\frac{16}{7765}$). This had been battered on the water-worn side; and from the other side, and from the ends, a few large chips had been flaked.

Wollochet Bay.

On the west side of the mouth of the creek on Picnic Point (Section 19 of Township 21 N. of Range 2 E., Willamette Meridian) is a shell-heap which had been cleared for use as a garden. It extends from the mouth of the creek about 100 metres westerly around the end of the point. The surf has cut a vertical section along the shell-heap. This averages about 70 cm. in height, but in places it reaches a maximum height of 1.2 metres. Back from the beach the surface is higher, so that the thickness of the shell layers here would seem to be greater, although the natural rise of the land upon which the heap rests may more than offset this; and especially does this latter seem to be the case, since there is no downward slope of the rear of the heap to the natural surface, which is there as much higher than it is at the beach, as the top of the heap is above the natural soil in the section. Burned and crackled stones are found in the exposed strata, as well as in the talus slope and among the beach materials washed out of this heap.

Steilacoom.

At Steilacoom, about six miles southwest of Tacoma, is a shell-heap which extends about 100 metres along the south side of Chamber's Creek from its

[1] See p. 323.

mouth, and from 6 metres to 10 metres up the hill-slope, reaching, a point about 2 metres above high tide. Its maximum height is probably about 1.5 metres. The tide and excavation for the road-bed of the Inter-urban Electric Car Line have exposed a section about the entire length of the heap. This section is 1.4 metres in maximum height, but averages about 1 metre. The section presents as much evidence as could be gained by considerable excavation, and from it all of our present knowledge was obtained. None of the layers are over 15 cm. in thickness; and the heap is composed of a great quantity of ashes, charcoal and black earth, some burned and crackled stones, numbers of shells of the clam and mussel, a few of the scallop, the whelk and *Lunatia lewisii* Gould, an occasional animal bone, and rarely an artifact. We found only one awl ($\frac{16}{7767}$), made of a metacarpal bone of an elk by grooving and then breaking out about a quarter-section of the upper end, retaining the articular surface for a handle, smoothing the broken edges, and sharpening the point.

Some natural mounds near Tacoma have been mentioned on p. 57 of this volume, and a stone club from the vicinity is shown in Fig. 173, *b*.

Olympia.

There is a celt made of serpentine in the Museum of the Oregon Historical Society (Cat. No. 42, List No. 46) which was found near Olympia by Mr. George H. Himes 1.5 metres deep, while digging a ditch through a gravel-bank between two parts of a small lake. It was presented to the Museum by Mr. Himes. One side of the celt is narrower than the other. Striations show on all surfaces of the object. The edge is sharpened by bevels from each side; but of these, the one from the widest side of the celt is by far the largest. The corners between the sides and edges are sharp. The top is broken off. No other implements have been found near this particular place. A stone club from Olympia is illustrated in Fig. 173, *a*.

Pierce, Thurston, and Mason Counties.

The following shell-heaps were located on a map for me by Judge James Wickersham:[1] —

1. At the mouth of the creek at the southern end of Vashon Island (Sec. 2, T. 21 N., R. 2 E., Willamette Meridian).

2. On the west shore of Commencement Bay, in the southeastern part of Defiance Park, Tacoma (Sec. 14, T. 21 N., R. 2 E., W. M.).

3. On the southwest shore of Commencement Bay, in Tacoma (Sec. 30, T. 21 N., R. 3 E., W. M.).

[1] See Map, p. 303.

4. On the western side of the harbor in Tacoma (Sec. 4, T. 20 N., R. 3 E., W. M.).

5. On the southern extremity of the harbor in Tacoma (line between Secs. 4 and 9, T. 20 N., R. 3 E., W. M.).

6. On Grave Island in Hales Passage off the north shore of Fox Island (Sec. 35, T. 21 N., R. 1 E., W. M.).

7. On the point projecting into Carrs Inlet from the east, northwest of Rosedale, north of Raft Island, and nearly opposite Minter (Sec. 3, T. 21 N., R. 1 E., W. M.).

8. At the mouth of the creek at Purdy, on the eastern side of and near the head of Carrs Inlet, and opposite Springfield (line between Secs. 13 and 24, T. 22 N., R. 1 E., W. M.).

9. On the point at Springfield projecting into the western side of Carrs Inlet, and opposite Purdy (Sec. 23, T. 22 N., R. 1 E., W. M.).

10. On the point at Minter (now Elgin) projecting into the western side of Carrs Inlet, east of a little bay into which flows a small stream about seven miles long, and nearly opposite Rosedale (Sec. 28, T. 22 N., R. 1 E., W. M.).

11. At Balch, on the western side of Carrs Inlet, on the eastern shore of a little bay into which flows a small stream about a mile long, and nearly west of Rosedale (Sec. 6, T. 21 N., R. 1 E., W. M.).

12. At Rosston, on the southern side of the mouth of a stream about two miles long, the outlet of Sequallichew Lake (Sec. 22, T. 19 N., R. 1 E., W. M.).

13. At the west of the mouth of a slough about three miles long, which is about two miles west of the mouth of Nisqually River (Sec. 30, T. 19 N., R. 1 E., W. M.).

14. On the mainland west of and opposite the middle of McNeils Island, and about two miles south of Delano (Sec. 18, T. 20 N., R. 1 E., W. M.).

15. On the point north of Filucy Bay, north of and opposite Long Branch, and west of and opposite the southwestern part of McNeils Island (Sec. 24, T. 20 N., R. 1 W., W. M.).

16. On the end of Johnson Point, at the mouth of Henderson Inlet (Sec. 33, T. 20 N., R. 1. W., W. M.).

17. On the north side of the mouth of Vaughns Bay, in the eastern side of Cases Inlet, and about three miles west of No. 11 of this list (Sec. 3, T. 21 N., R. 1 W., W. M.).

18. On the west shore of Cases Inlet, north of the mouth of Sherwood Creek, which is about seven miles long and the outlet of Masons Lake, and about a mile south of Allyn (Sec. 20, T. 22 N., R. 1 W., W. M.).

19. At the mouth of a stream about seven miles long, emptying into the northeastern part of the head of Cases Inlet, and across the inlet to the northeast of Allyn (line between Secs. 9 and 16, T. 22 N., R. 1 W., W. M.).

20. On Lynch Cove, the eastern end of Hoods Canal, about a mile north of Bergen (Sec. 6, T. 22 N., R. 1 W., W. M.).

21. On Sandy Point, opposite Hope Island, between Totten Inlet and Budds Inlet (Sec. 33, T. 20 N., R. 2 W., W. M.).

22. On the western side of Henderson Inlet, about five miles south of the shell-heap at Johnson Point (Sec. 20, T. 19 N., R. 1 W., W. M.).

23. On the point in the northern part of Olympia, being at the mouth of a small creek (Sec. 14, T. 18 N., R. 2 W., W. M.).

24. At Tumwater, the falls of the Deschutes River, or the head of Budds Inlet (Sec. 26, T. 18 N., R. 2 W., W. M.).

25. At the most western bend of Elds Inlet, about six miles north of west of Olympia (line between Secs. 2 and 11, T. 18 N., R. 3 W., W. M.).

26. On the eastern side of Totten Inlet, about five miles from its head (line between Secs. 13 and 24, T. 19 N., R. 3 W., W. M.).

27. On the north side of Totten Inlet, about two miles from its head, or about a mile northeast of Burns Landing (Sec. 21, T. 19 N., R. 3 W., W. M.).

28. At the mouth of the Tahuyen River and a smaller stream, across Hoods Canal to the northeast of Union City (Sec. 27, T. 22 N., R. 3 W., W. M.).

Clubs made of Bone of Whale.

(*By Franz Boas*).

One of the most characteristic types of specimens from the region between Vancouver Island and Columbia River is the war-club made of bone of whale or of stone, broad and rather thin, of lenticular cross-section, and generally with a carved head. This type of club, which is represented in Figs. 165-171, bears a certain resemblance to the clubs of Hawaii and New Zealand, and it has been claimed that their occurrence proves direct relationship between Northwest American culture and that of the Polynesian Islands. I believe that the group of clubs brought together here by Mr. Smith, and representing practically all the specimens of which he has been able to gain information, will clearly show that this type of club has developed independently in America. A comparison of the localities from which the clubs have been obtained will show that the majority are from the west coast of Vancouver Island, a number having been obtained in Indian villages, where they were probably in use until recent times. The clubs made of bone of whale from the more outlying districts, as Columbia River and the interior of British Columbia at Kamloops, do not deviate sufficiently from the fundamental type to justify the assumption that they are of independent origin.

I have combined in Figs. 165-171 clubs made of bone of whale, and these are arranged according to the definiteness with which they represent

the fundamental type. Fig. 165, *a-c*, shows clearly that the handle is conceived of as the head of the eagle or thunder-bird represented in the type commonly found in the art of the Nootka, with a bird head-dress of the type of the eagle-head masks so commonly used by the Nootka Indians. In Fig. 165, *b*, the eye and beak of the head-dress are not marked, so that possibly

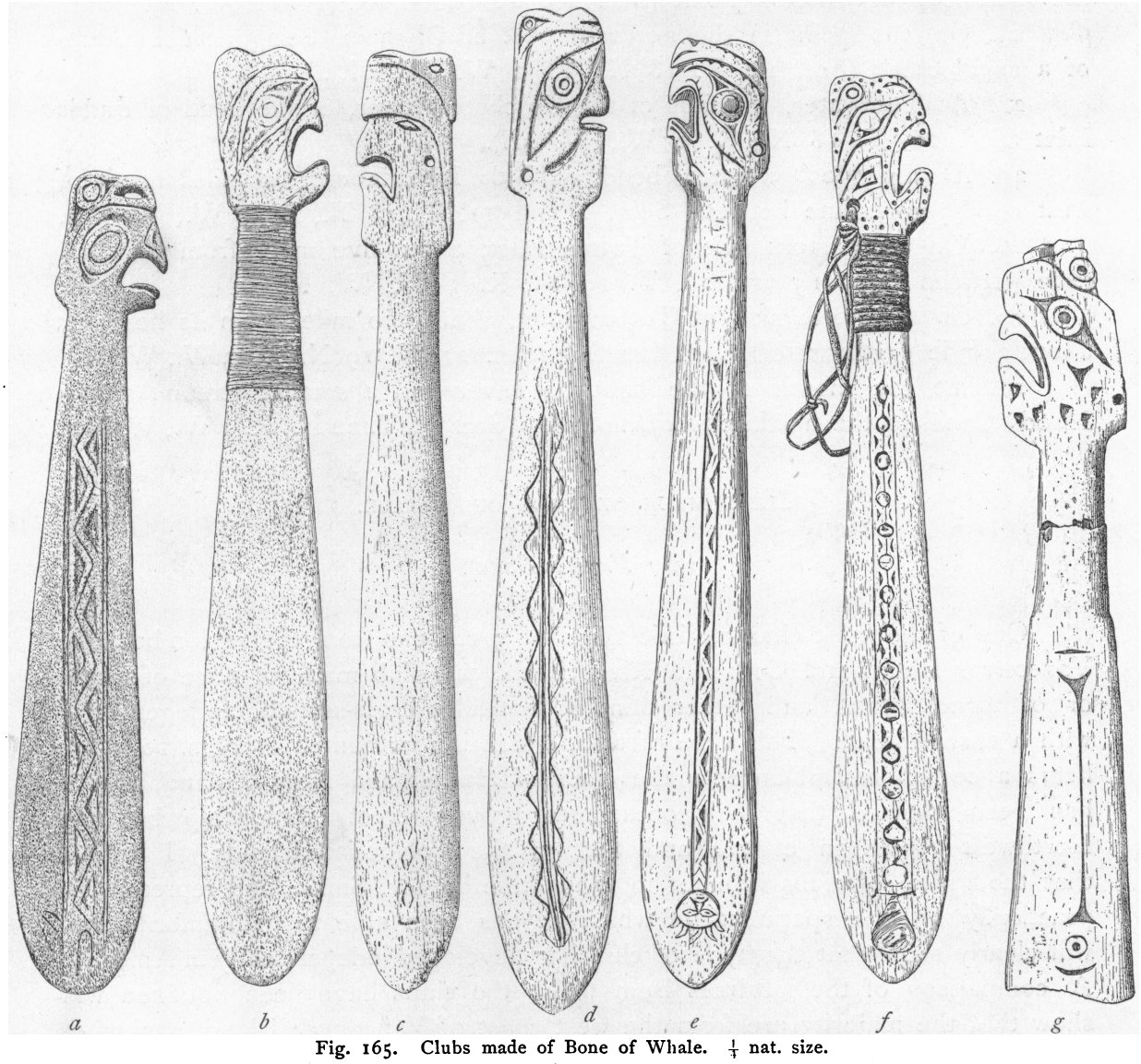


Fig. 165. Clubs made of Bone of Whale. $\frac{1}{4}$ nat. size.

a, From Nootka, collected by Captain Cook (British Museum, Cat. No. N. W. C. 42); *b*, From Nootka (British Museum, Cat. No. N. W. C. 47); *c*, From Columbia River (Oregon Historical Society, Cat. No. 385, List 38); *d*, From Nootka, collected by Captain Cook, 1778 (Ethnographical Museum, Florence); *e*, From Barclay Sound, collected by Mr. A. Jacobsen (Royal Ethnographical Museum, Berlin, Cat. No. IV. A 1574); *f*, From Nootka, collected by Captain Cook (British Museum, Cat. No. N. W. C. 41); *g*, From shell-heap at Cadboro Bay collected by Mr. J. Maynard (Provincial Museum, Victoria, Cat. No. 769).

this portion of the handle might be conceived of as the ear and forehead of the eagle; but a comparison with Fig. 165, *a*, brings out the practical identity in outline, showing that the origin of the form must have been the same.

Fig. 165, *c* and *d*, exhibits again clearly the bird head-dress; *c*, however, differs from the others in the smallness of the eye, which gives the head a somewhat human shape, and which modifies the section ordinarily occupied by the eye in such a way that it appears like human hair. Even if this had been the idea that the artist intended to elucidate, the cut of the mouth, and the

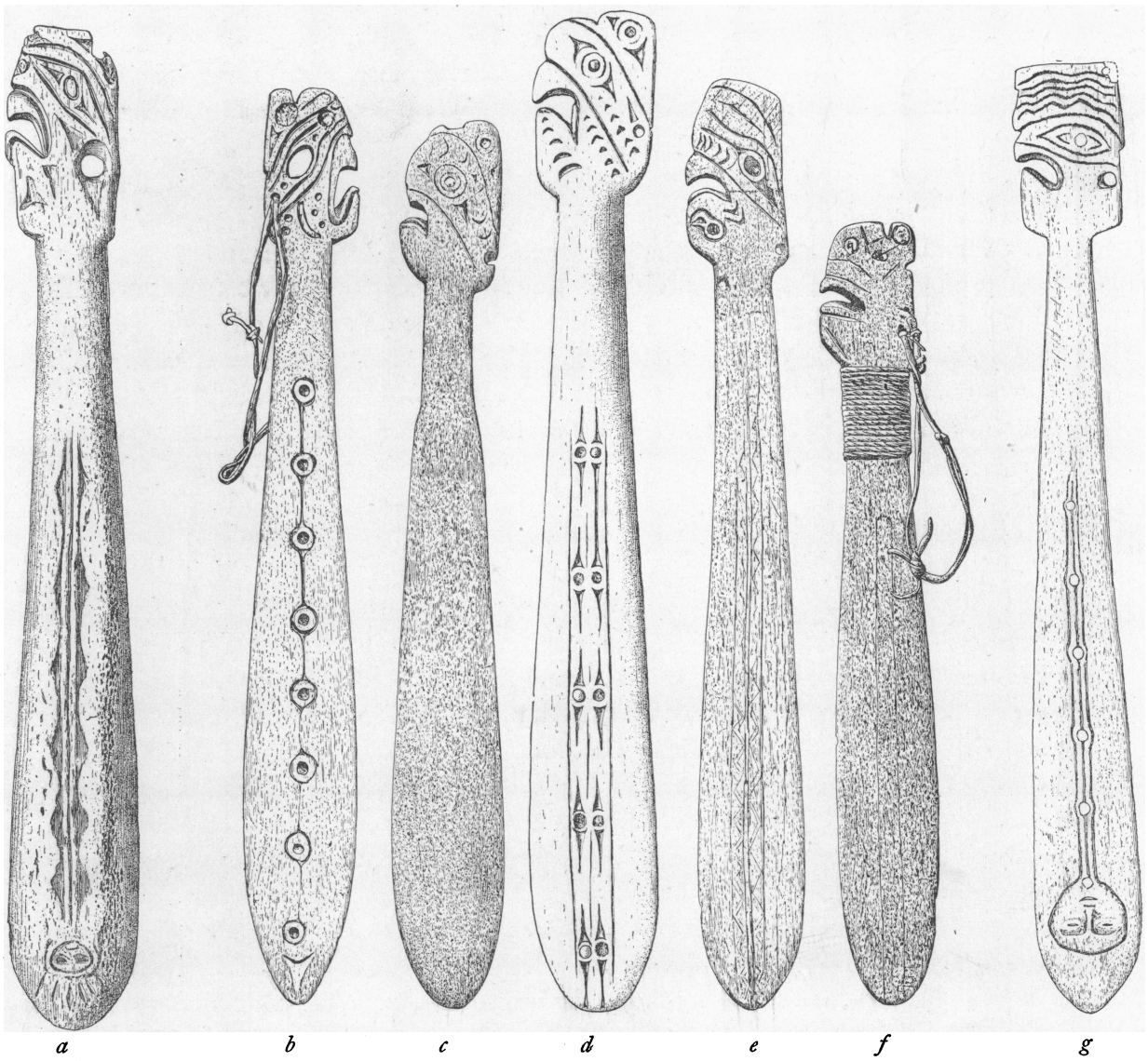


Fig. 166. Clubs made of Bone of Whale. $\frac{1}{4}$ nat. size.

a, From Neah Bay, collected by Hon. James Wickersham (U. S. National Museum, Cat. No. 198032); *b*, Collected by Vancouver (British Museum, Van. 93); *c*, From Nootka (collection of Mr. W. Sparrow Simpson, British Museum, Cat. No. 9383); *d*, From Upper Columbia River, collected by Col. Brooks, U. S. A., about 1810, property of Mr. M. F. Savage, New York (American Museum of Natural History, cast No. $\frac{1}{8}\frac{6}{7}\frac{6}{8}$); *e*, British Museum, Cat. No. 78-11-1.623; *f*, From Nootka (British Museum, Cat. No. 8766); *g*, University Museum, Cambridge, Eng., Cat. No. R. D. 112 d.

similarity of the field occupied by the hair to what is ordinarily the eye-field, show that the fundamental type is the same, although it may have been

interpreted somewhat differently here. It will be noticed that this specimen, which differs somewhat in interpretation from the others, is from the Columbia River, a point far distant from the centre of distribution of these clubs. The

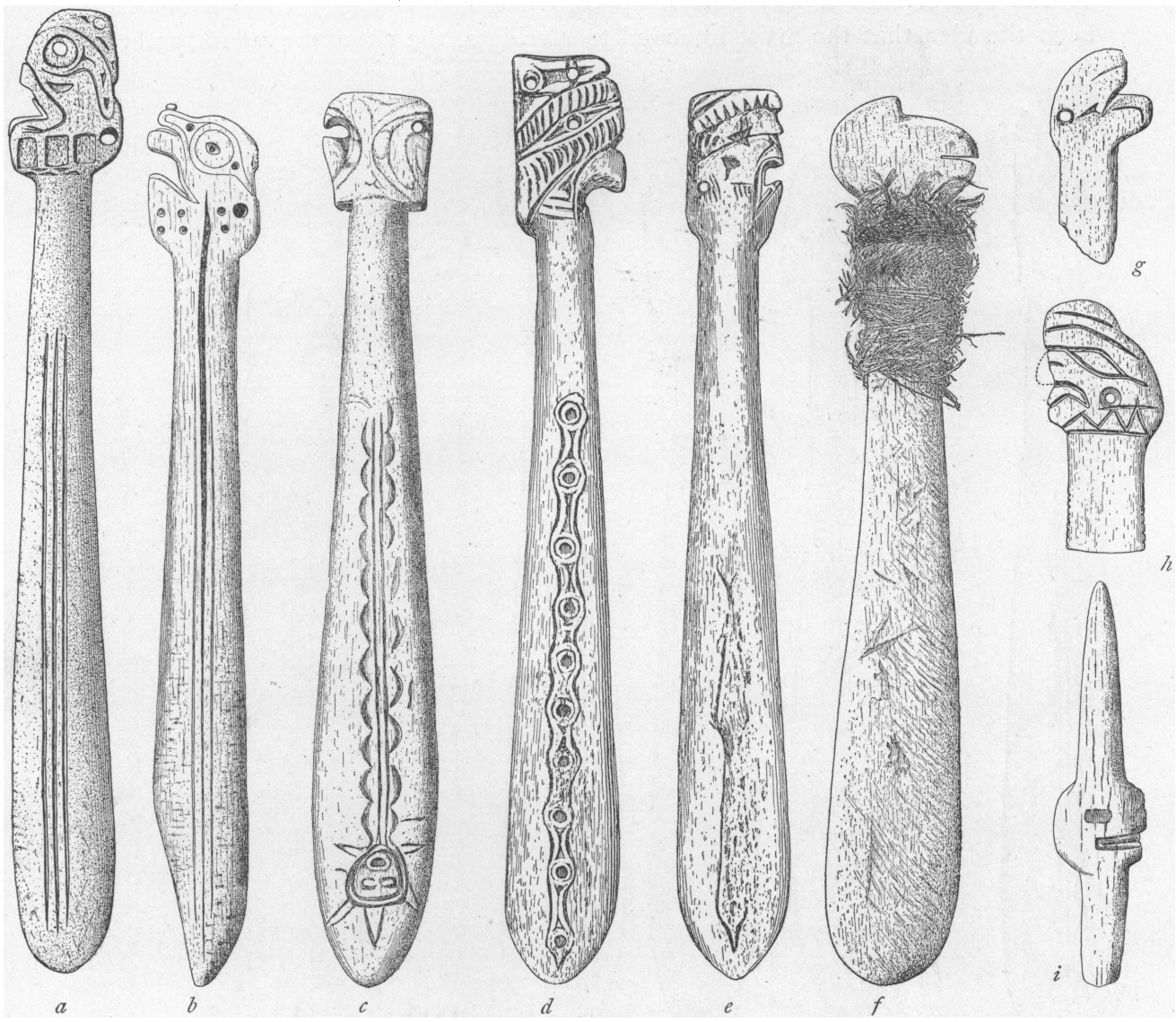


Fig. 167. Clubs made of Bone of Whale (except *h*). $\frac{1}{4}$ nat. size.

a, From Quamichan Indians, collected by Dr. C. F. Newcombe (Field Museum of Natural History, Chicago, Cat. No. 85348); *b*, From shell-heap, Plumper's Pass, collected by Mr. Eduard Lomas (Provincial Museum, Victoria, Cat. No. 770); *c*, From Neah Bay, collected by Hon. James Wickersham (U. S. National Museum, Cat. No. 198033); *d*, From Nuchatlath, collected by Mr. A. Jacobsen (Royal Ethnographical Museum, Berlin, Cat. No. IV A 1215); *e*, From Hesquiath, collected by Mr. A. Jacobsen (Royal Ethnographical Museum, Berlin, Cat. No. IV A 1573); *f* ($\frac{16}{2100}$), From Clayoquath, collected by Mr. Fillip Jacobsen; *g* ($\frac{16}{9152}$), Bishop Collection from British Columbia; *h* ($\frac{200}{1471}$), Made of serpentine, from Blalock Island, Wash., opposite Umatilla, Ore., collected by Mr. D. W. Owen; *i*, From Cadboro Bay, collected by Mr. James Deans (Provincial Museum, Victoria, Cat. No. 774).

clubs represented in *e*, *f*, and *g* of this figure are also quite realistic representations of the eagle-head surmounted by a bird head-dress. Attention may be called to the line and scallop designs on *e*, which, according to the inter-

pretation of the modern Indians, indicate feathers. Feathers are also indicated by the dot design on *f* and the triangular incisions on *g*, an old specimen from Cadboro Bay.

The group of clubs combined in Fig. 166, *a-d*, differ from the preceding group only in having the eye-field set off more definitely from the head-dress and the lower part of the face. In these specimens also (except in *c*) dots and grooved lines indicate feathers.

The specimens Fig. 166, *e-g*, retain all the fundamental features of the preceding types, except that the bird head-dress (except in *f*) disappears; nevertheless the form of the beak and the general outline of the club are so nearly the same as those of the preceding types that there can be no doubt of the fundamental identity of these designs. In *e* we observe the trait characteristic of modern Northwest coast art of indicating the body of the animal on the head by a representation of the foot with its joint on the lower jaw.

The forms combined in Fig. 167 are more degenerate representations of the same type. The indistinctness of *a* may be due to the imperfect condition of the handle. In *b* and *c* the identity of type is brought out particularly by the form of the beak. The club illustrated in *d* had probably originally a lower jaw, which seems to have been broken off. In both this and the following the bird head-dress is indicated, although not with the usual clearness. The modern specimen shown in Fig. 167, *f*, and the old one in Fig. 167, *g*, deviate considerably from the preceding types, the handle being carved simply in the shape of a bird's head. The specimen represented in Fig. 167, *h*, is made of serpentine, and is inserted here for the purpose of comparison. The incised design on the handle is crude, but resembles so much in type the handles heretofore described that it must probably be considered as a copy of this type. The specimen represented in Fig. 167, *i*, presumably does not belong to this series, but seems to be a dagger.

In Fig. 168, *a*, another specimen is represented which is quite typical, showing clearly the crooked beak, the eye, and the head-dress. In this specimen we find, however, a peculiar displacement of the eye, which, instead of being placed over the beak, has been made just behind it. This and the exaggeration of the curvature of the beak lead to the series of types represented in Fig. 168, *b-e*, in which, in place of an upright head, we have a curved beak placed in the axis of the club. That this is the correct interpretation of these forms, is illustrated particularly by the occurrence of the peculiar notch in the upper termination of *b*, and by the eye in the upper termination of *c*.

The two human forms illustrated in Fig. 168, *f*, and Fig. 169, *a*, may be considered as strong modifications of the original type. Possibly the common form of the forehead in the typical forms explains the excessive bulge of the forehead in Fig. 168, *f*.

The remaining clubs cannot be readily classified with the preceding types, partly on account of the differences of the form of blade, partly on account

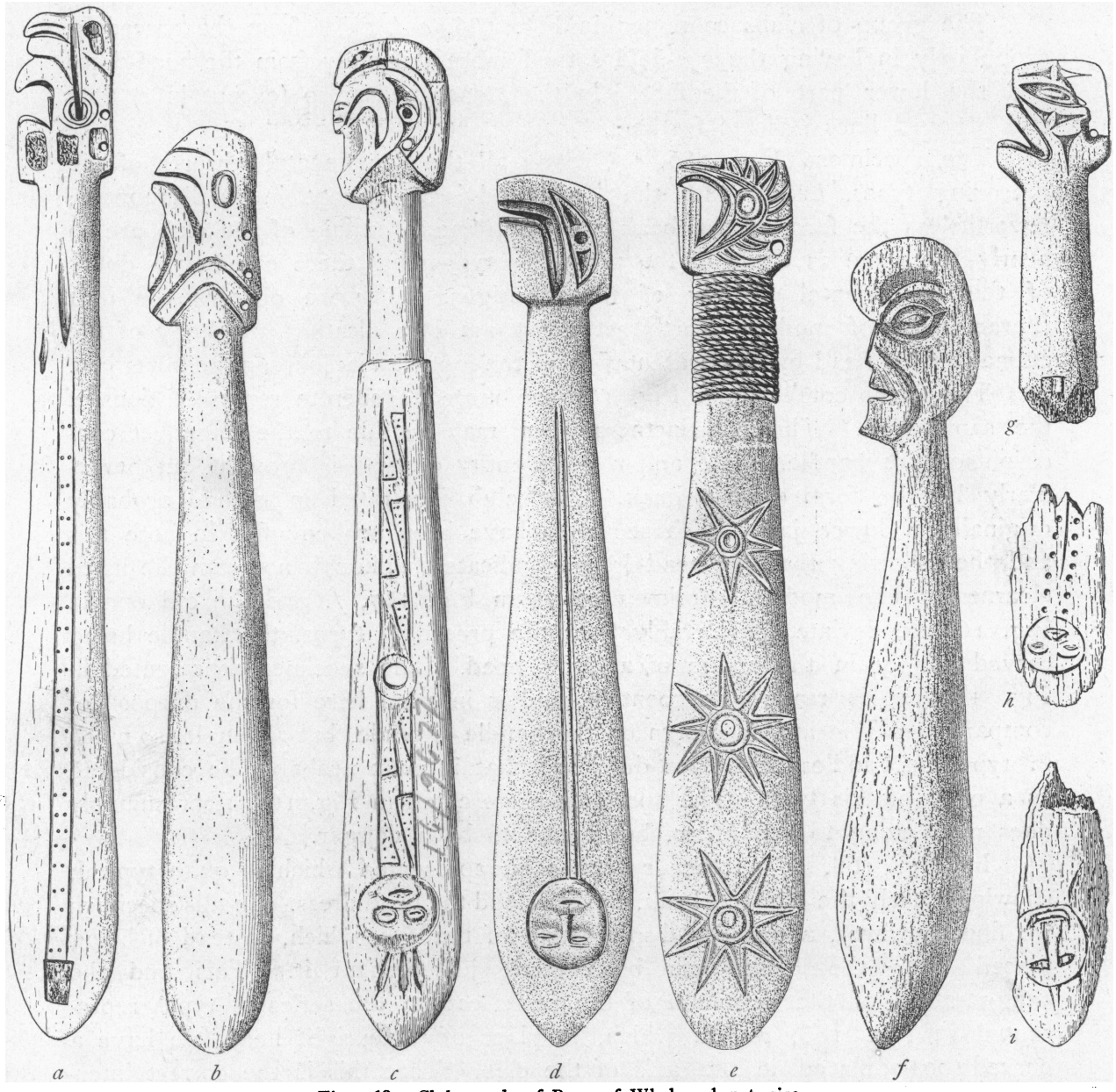


Fig. 168. Clubs made of Bone of Whale. $\frac{1}{4}$ nat. size.

a, From Fort Vancouver, Wash., about 1830 (Academy of Natural Sciences, Philadelphia); *b*, From Neah Bay, collected by Hon. James Wickersham (from cast in U. S. National Museum, Cat. No. 198031); *c*, Peabody Academy of Sciences, Salem, Mass., Cat. No. E 6640; *d*, *e*, From Nootka, collected by Capt. James Magee about 1794 (Peabody Museum, Cambridge, Mass. Cat. Nos. 256 255,); *f*, From Neah Bay, collected by Hon. James Wickersham (from cast in U. S. National Museum, Cat. No. 198030); *g* ($\frac{1}{8\,5\,5}$), From shell-heap at Cadboro Bay; *h* ($\frac{1}{9\,1\,1}$), Bishop Collection; *i* ($\frac{1}{1\,1\,8\,0}$), Excavated on Songish Reservation.

of difference in form of the handle. None of the typical handles have the blade shaped and incised so as to represent the whole animal, while the clubs

shown in Fig. 169, *b* and *c*, are thus treated. Notwithstanding the strong curvature of the beak of the animal represented in Fig. 169, *b*, I presume it is intended for a killer-whale with a fin extending backward from the head.

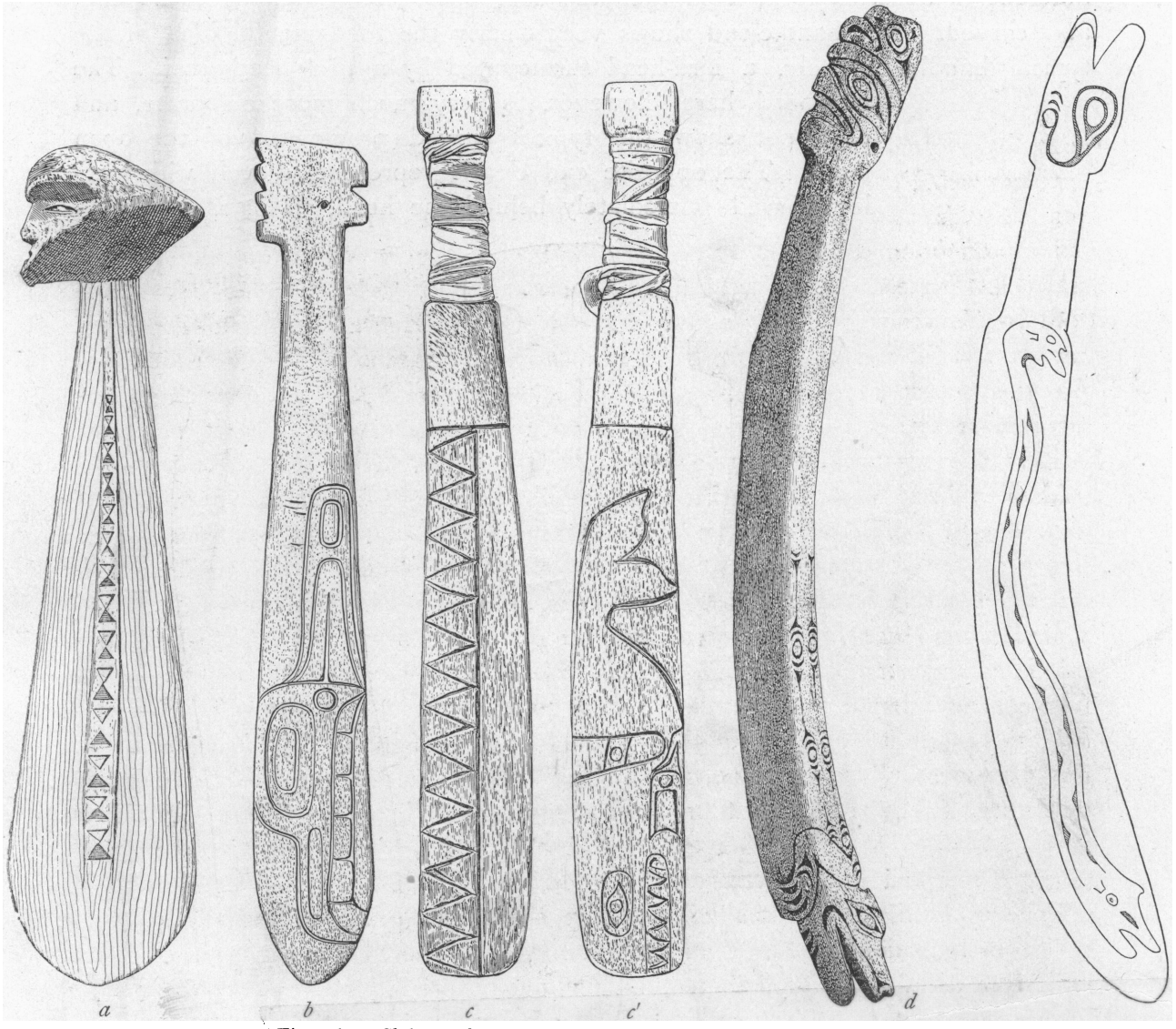


Fig. 169. Clubs made of Bone of Whale (except *a*). ¼ nat. size.

a, Made of wood, from Nootka (British Museum, Cat. No. N. W. C. 39); *b*, Collected by Mr. A. Jacobsen (Royal Ethnographical Museum, Berlin, Cat. No. IV A 1575); *c*, *c'*, From Hopitchisath, collected by Professor K. von den Steinen (Royal Ethnographical Museum, Berlin, Cat. No. IV A 7108); *d*, British Museum, Cat. No. 9382, collection of Mr. W. Sparrow Simpson; *e*, From West coast of Vancouver Island, collected in 1790 by Professor E. H. Giglioli, Florence (from drawing and photos by Mr. D. I. Bushnell, Jr.)

The curvature of the head itself is rather suggestive of a bird's head. The treatment of the handle is somewhat interesting, the notches suggesting a correspondence to the outlines of the typical eagle-head handles. Without some such analogy, the peculiar notching of the handle would be difficult to understand. The following specimen (Fig. 169, *c*) has simply the square knob,

and the blade is carved in the form of a killer-whale with fin turned down. Obviously the fundamental idea of decoration in this specimen is quite distinct from that applied in the eagle-clubs. The club shown in Fig. 169, *d*, is quite different in essential form from the preceding ones. It is rounder in section, and curved. The handle-end shows very clearly the fundamental idea of the typical handle; namely, a bird-head surmounted by a bird head-dress. The bird-head here, however, is very much more elaborate, and does not show the typical curved profile cut of the open beak. The opposite end clearly represents a wolf with fore-leg carved immediately behind the head. This is obviously

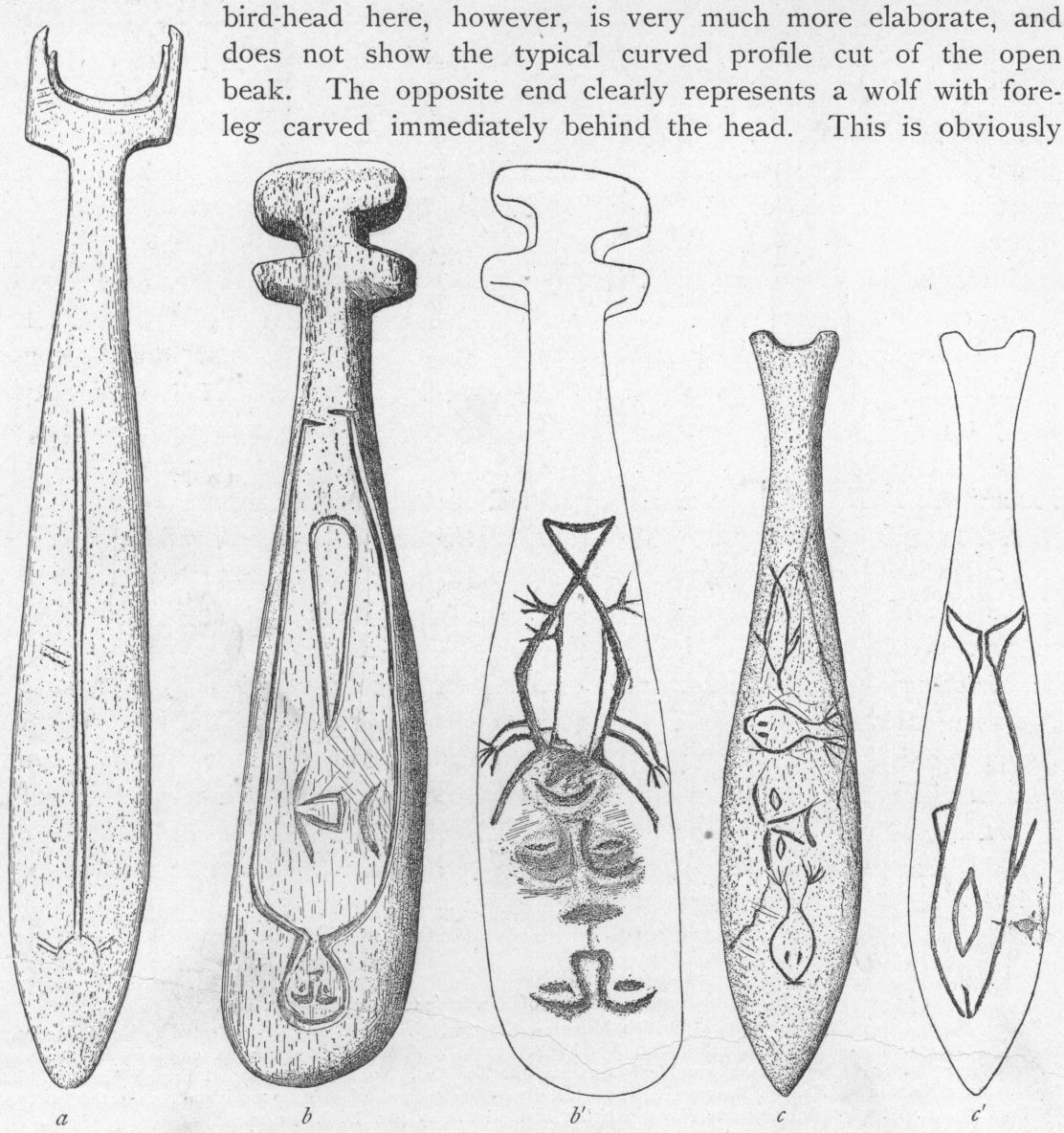


Fig. 170. Clubs made of Bone of Whale. $\frac{1}{4}$ nat. size.

a, From Nootka, collected by Captain Cook in 1778 (Ethnographical Museum, Florence); *b*, *b'* ($\frac{1}{2}\frac{6}{10}\frac{1}{7}$) *c*, *c'* ($\frac{1}{2}\frac{6}{10}\frac{1}{5}$), From Clayoquath, collected by Mr. Fillip Jacobsen.

also the idea of the similar club shown in Fig. 169, *e*. In this case the wolf's head is put at the upper end, and the fore-leg is joined to the eye in a manner quite common in the art of the North Pacific coast. The incised

design on the blade represents the double-headed serpent of the Nootka, the symbol of lightning.

The three clubs shown in Fig. 170, *a-c*, have blades of the characteristic type. The handles, however, are quite distinct.

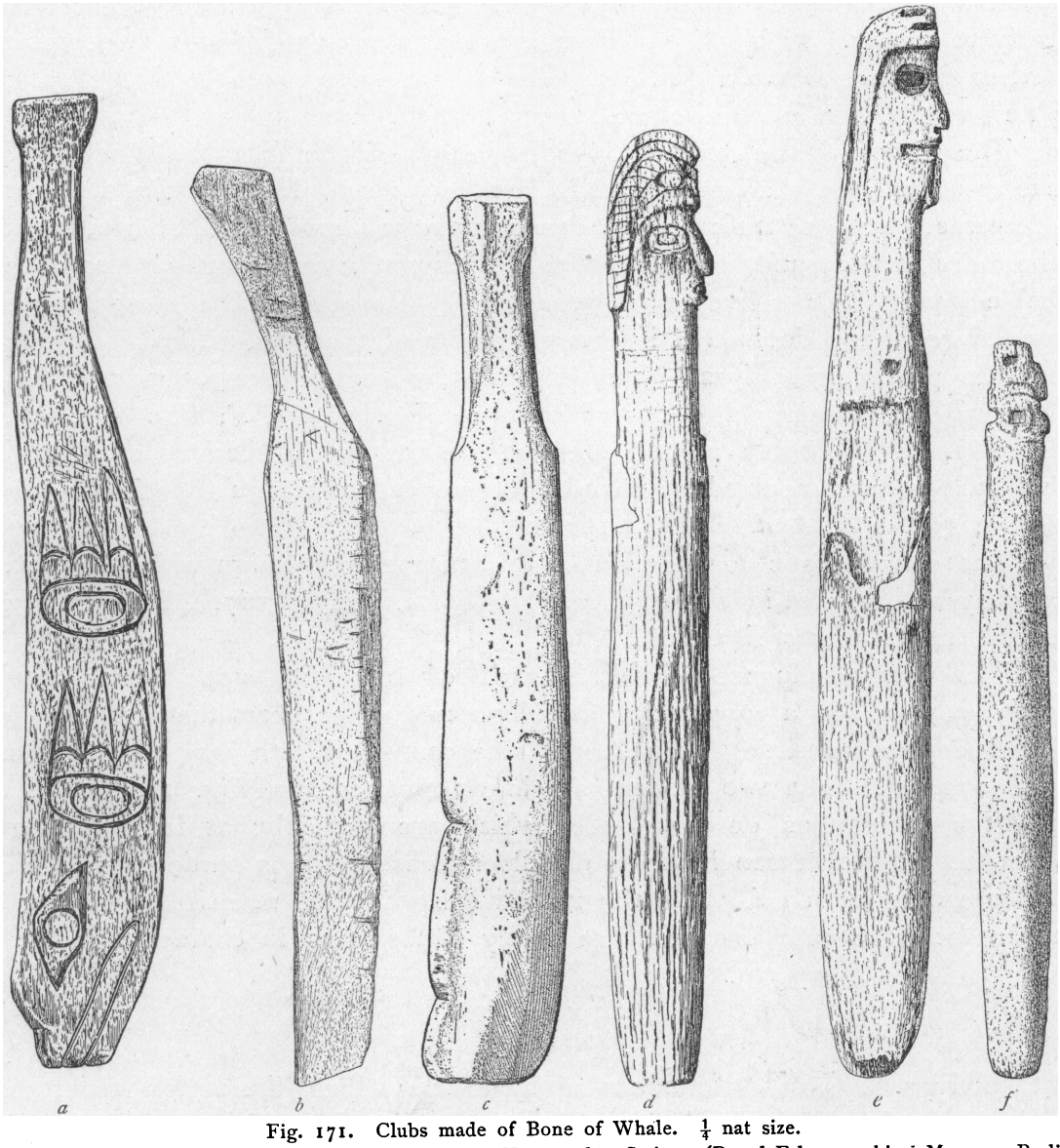


Fig. 171. Clubs made of Bone of Whale. $\frac{1}{4}$ nat size.

a, From Hopitchisath, collected by Professor K. von den Steinen (Royal Ethnographical Museum, Berlin, Cat. No. IV A 7109); *b* ($\frac{16}{2670}$), From Quatsino Sound, collected by Dr. R. B. Dixon; *c*, From Tongass Indians, collected by Hon. James Wickersham (from cast in U. S. National Museum, Cat. No. 198029); *d* ($\frac{16}{2475}$), *e* ($\frac{16}{2474}$), From Kamloops; *f* ($\frac{16}{8317}$).

The first three specimens shown in Fig. 171 differ from the typical clubs in not being symmetrical, but being clearly used on one edge only, probably as bone swords. They are introduced here for the purpose of comparison with the handles of the preceding specimens. The last group (Fig. 171, *d-f*)

represents two clubs found at Kamloops[1] and one of doubtful provenience. The last of these was purchased in Victoria from a curio-dealer, who claimed that it came from Douglas Channel. No weight, however, can be attributed to his statement. In type these three specimens are identical. The handles represent human faces surmounted by a head-dress in which eye and beak clearly re-appear. It is of course possible that these specimens may represent warriors in war costume, but it seems to me more probable that they are related to the type here discussed.

The blades of the clubs are not less characteristic than the handles. In general outline the characteristic clubs are very much alike. While a few are undecorated, most of them show a decoration which consists either of a central geometrical band usually present on both sides of the club or of a human head combined with this conventional geometrical decoration. The most common type of geometric decoration is that of a row of triangles, either alternating, and thus producing a zigzag band (Fig. 165, *a* and *e*), or in opposition along a medial line forming a series of lozenges (Fig. 165, *c*, *d*; Fig. 166, *a*, *e*; Fig. 167, *c*). Probably related to these are the circular designs often inlaid with haliotis, accompanied by rounded or somewhat triangular incisions (Fig. 165, *f*; Fig. 166, *b*, *d*, *g*; Fig. 167, *d*).

The characteristic combination of this geometrical design with the human face may be observed in Fig. 165, *e*; Fig. 166, *a*, *g*; Fig. 167, *c*; Fig. 168, *c*, *d*; and in the fragments Fig. 168, *h*, *i*.

The strong influence of this method of decoration upon inland art is clearly exhibited in a copper club from Spuzzum which bears the same type of incised design, consisting of a human face connected with long central lines[2] (Fig. 172, *d*). The two modern specimens illustrated in Fig. 170, *b* and *c*, show incised designs on the blades which are probably, at least in part, influenced by the human head on the older clubs. This is particularly true of the human figure on *b*, while the incised designs on *c*, representing fishes, a human face, and a killer-whale, are purely pictographic in character.

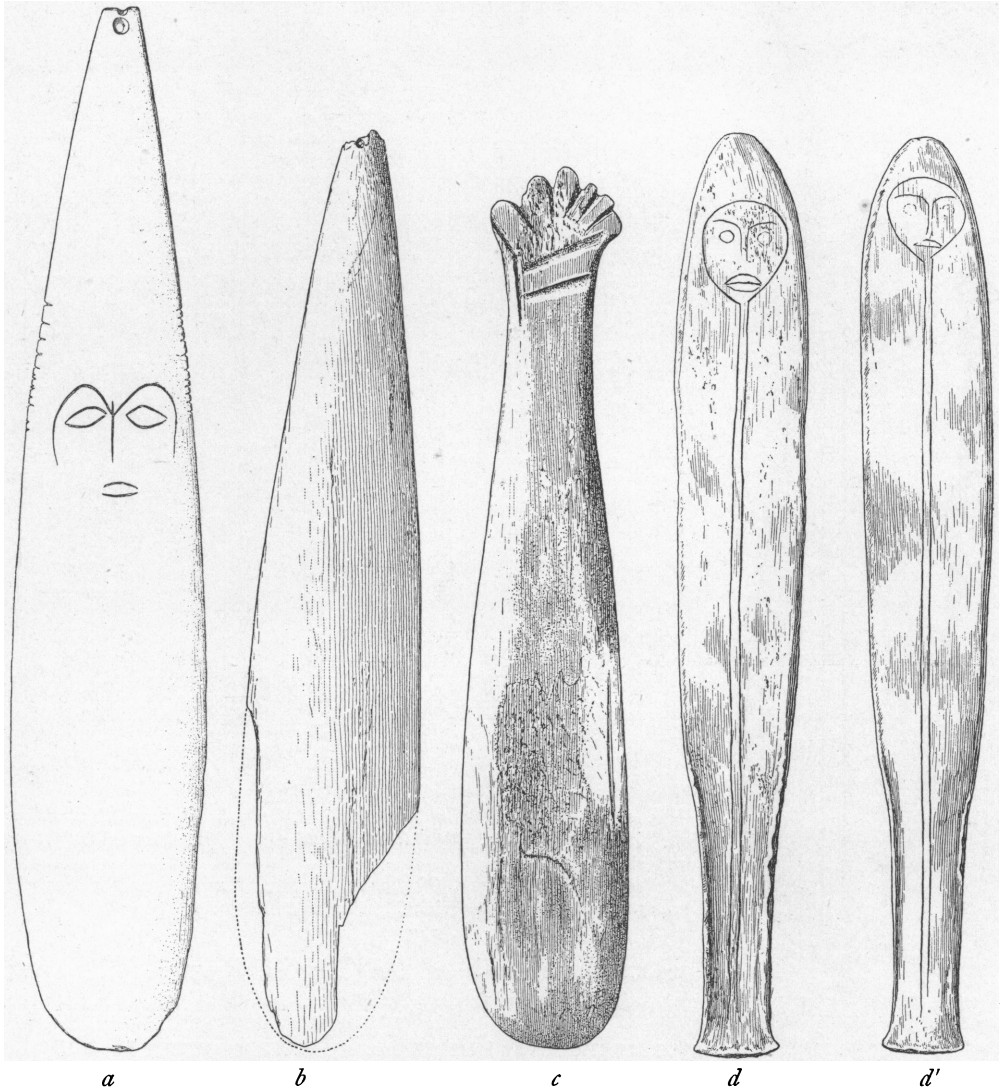
Stone Clubs.

In Figs. 172-177 a number of stone clubs from the region under discussion have been combined. It will be seen that these differ considerably in type from the clubs made of bone of whale just described: they lack the carved handle which is so characteristic of almost all the bone clubs; and about half of them have, instead of the lenticular or flat cross-section of the bone club, a lozenge-shaped cross-section, or they are rounded and provided with heavy ridges.

It is quite possible that a few thin, flat specimens (represented in Fig.

[1] See Vol. I, p. 422. [2] See Vol. I, p. 150.

172, *a-c*) may be related in type to the bone clubs. This is particularly true of the first specimen (*a*), which is only 12 mm. thick. The most striking point that reminds us of the bone blades is the occurrence of an etched human face, which is represented on each side of this club. The specimen shown in



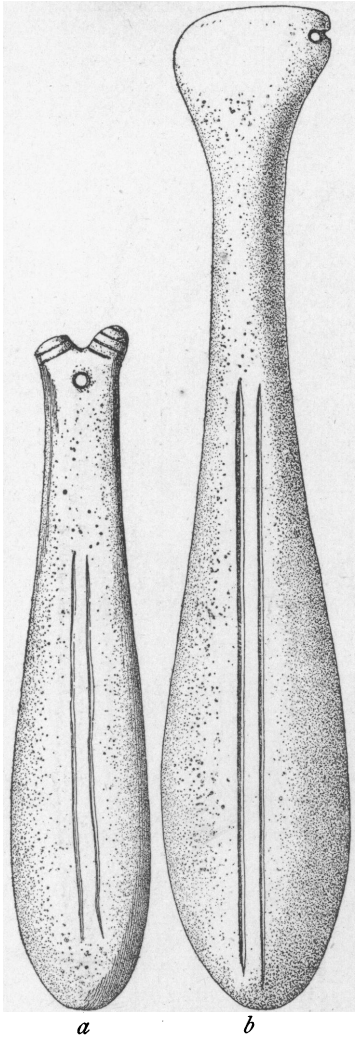
a *b* *c* *d* *d'*

Fig. 172. Clubs made of Stone and Copper. $\frac{1}{4}$ nat. size.

a, Made of serpentine schist, ploughed up by Mr. Lindley Meeker at Ridgefield, Wash. (drawn from a cast, $\frac{16}{9485}$, of the original, owned by the Historical Society, Portland, Ore., Cat. No. 386, List 40); *b*, Made of slate, found in Klickitat Valley, Wash. (Mr. Frank N. McCandless' collection, Ferry Museum, Tacoma, Wash., Cat. No. 566); *c*, ($\frac{T}{18461}$), Made of serpentine, from Sand Point, Idaho (collected by Dr. H. R. Littlefield); *d*, *d'* ($\frac{16}{7610}$), Made of copper, from Spuzzum, B.C. (collected by Mr. James Teit).

Fig. 172, *b*, is also about 12 mm. thick near the top of the handle, the blade being somewhat thinner. There are seventeen notches on one edge, nineteen on the other. There is a similar club, perforated through the handle, in the H. C. Stevens collection.

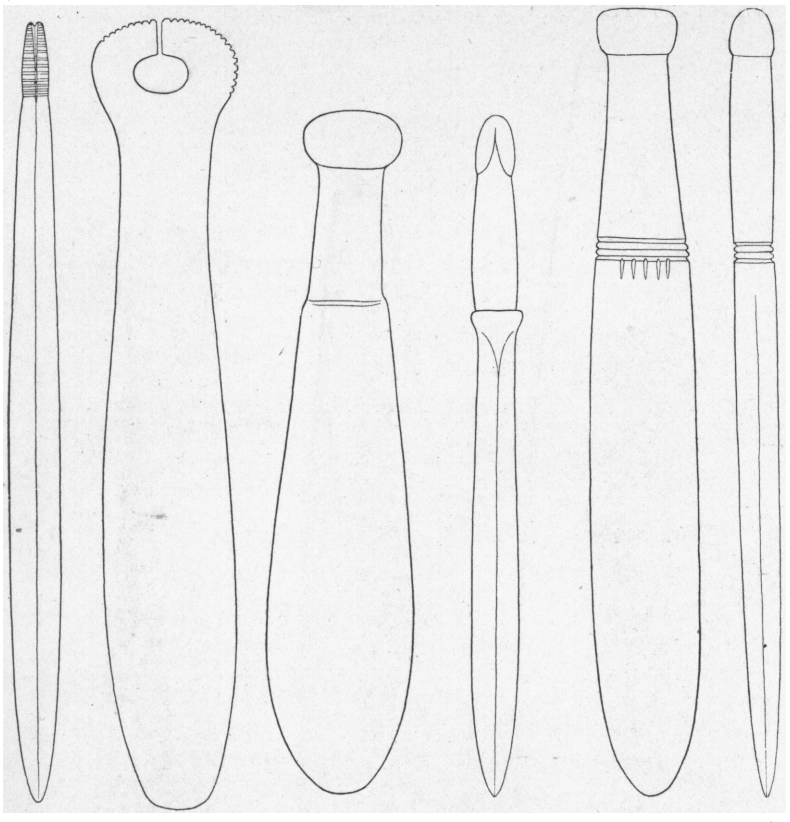
Seven fragments (Cat. No. $\frac{20\cdot2}{8677}$) of a club of this shape, perforated through the handle, were found by Mr. Albert A. Argyle of our expedition, in 1903, on the top of Mount Coffin, overlooking the Columbia River from the north,



a *b*

Fig. 173. Stone Clubs. Collected by Hon. James Wickersham. ¼ nat. size.

a, From Olympia, Wash. (from cast in U. S. National Museum, Cat. No. 172565); *b*, From the Nisqually Indians (from cast in U. S. National Museum, Cat. No. 198028).



a *a'* *b* *b'* *c* *c'*

Fig. 174. Clubs made of Serpentine. (Peabody Museum, Cambridge, Mass., Cat. Nos. 64795, $\frac{R}{608}$, $\frac{R}{609}$; from Sketches by Mr. Charles C. Willoughby). ¼ nat size.

a, From Methow River, Okanogan County, Wash.; *b* and *c*, Probably from Klamath Valley (in Frederick H. Ringe collection).

below the mouth of the Cowlitz River. The specimen illustrated in Fig. 172, *c*, marks the most eastern occurrence of this type. It was found at Sand Point, Idaho. Two oblique grooves extend across the handle on each side, those on one side being parallel to those on the other. In Fig. 172, *d*, a copper club from Spuzzum[1] is represented, which is also evidently related in form to the clubs made of bone of whale.

The two stone clubs shown in Fig. 173 — the first (*a*) collected at Olympia, the second obtained from the Nisqually Indians — recall the general form of the clubs made of bone of whale.

A group of thick clubs with sharp edges is represented in Fig. 174.

[1] See Vol. I, Fig. 82, p. 150.

The provenience of two of these is not definitely known, but they are supposed to come from the Klamath region in northern California. The handle, as well as the form of the blade, are quite different from those parts in the group shown in Fig. 172, *a*, *b*.

The five specimens grouped in Fig. 175 have the lozenge-shaped cross-section before mentioned. This type of club, with perforated handle, through

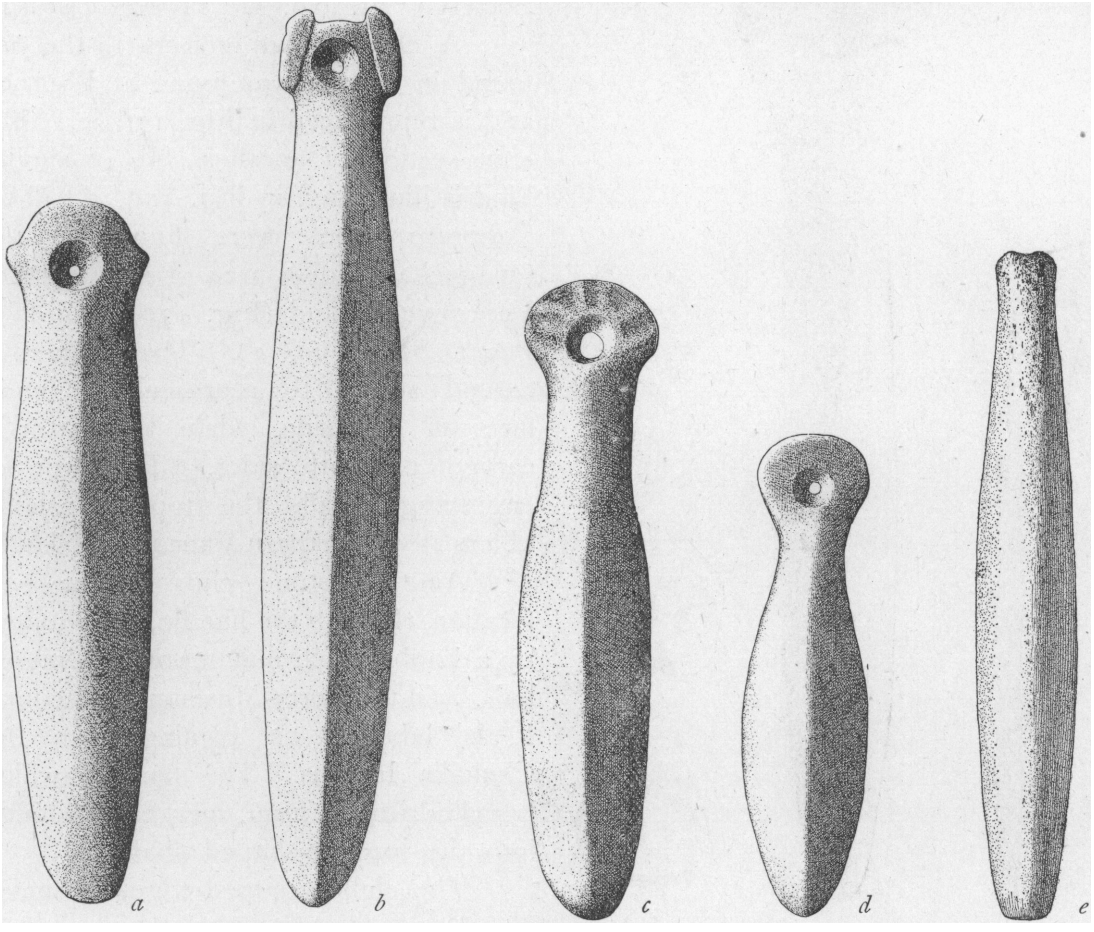


Fig. 175. War-Clubs made of Stone, with Perforated Handles. $\frac{1}{4}$ nat. size.

a From Florence, Lane County, Ore. (cast in U. S. National Museum, Cat. No. 215484; collected by Mr. A. F. Barrott); *b*, From Mary's Park, Wasco County, Ore. (U. S. National Museum, Cat. No. 97300; collected by Dr. W. W. Oglesby); *c*, From Scappoose, Ore. (Oregon Historical Society, Cat. No. 348, List 37; collected by Mr. C. H. Lamberson); *d*, From Burton Wash. (collection of Mr. Judd; from a sketch by Mr. Westlake); *e* ($\frac{16}{1110}$), From shell-heap, Copalis Head, Wash.

which was passed a thong or string by means of which the club was attached to the wrist, has been found from Florence, Lane County, Ore. (Fig. 175, *a*), northward as far as the Fraser River Delta and Cowichan.

The first of these specimens here illustrated (Fig. 175, *a-c*) are characterized by simple decorations of the handle. All three of them were found in Oregon. Those shown in *d* and *e*, the latter broken, have simple handles, and were found in Washington. Another specimen of this kind, which is in the

collection of Mr. George H. Damon at Damon, was found in the vicinity of Gray's Harbor. Other specimens of the same kind are one from Neah Bay, in the Free Museum of Science and Art, University of Pennsylvania (Cat. No. 37350); and the blade of another one, found in the Rickreall Valley, in the Museum of the Oregon Historical Society (Cat. No. [2] 11002, List 51).

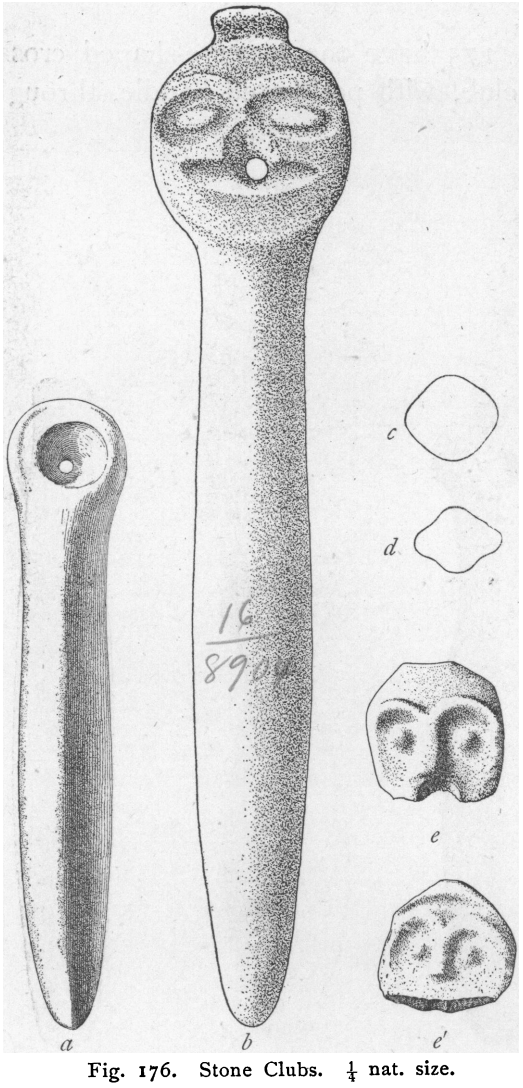


Fig. 176. Stone Clubs. $\frac{1}{4}$ nat. size.

a ($\frac{16}{9044}$), From shell-heap at Eburne; *b*, From southeastern Vancouver Island (Royal Ethnographical Museum, Berlin, Cat. No. IV A 2406); *c*, Section of *a*; *d*, Section of stone club, Port Hammond; *e*, *e'*, Drawn from casts of the original in the Ferry Museum, Tacoma, Wash. (cast A. M. N. H., Cat. No. $\frac{16}{9254}$ A, B).

A club similar in form to the one found in Burton was found at Eburne,[1] and is reproduced in Fig. 176, *a*. The cross-section of another club of similar kind is illustrated in Fig. 176, *d*. More elaborate types were found in the Quamichan Indian area of southeastern Vancouver Island (Fig. 176, *b*) and on Puget Sound (*e*, *e'*). The former is carved so as to represent a human face on one side, while the latter is carved on both sides. The type of engraving recalls the tops of slave-killers from northern Vancouver Island.[2]

Another stone club with a perforation through the handle, surmounted by a knob, which may represent dressed hair, is in the Ferry Museum at Tacoma. It is labelled as coming from the Chehalis Indians. The handle, which is cylindrical in form, merges gradually into the lozenge-shaped shaft.

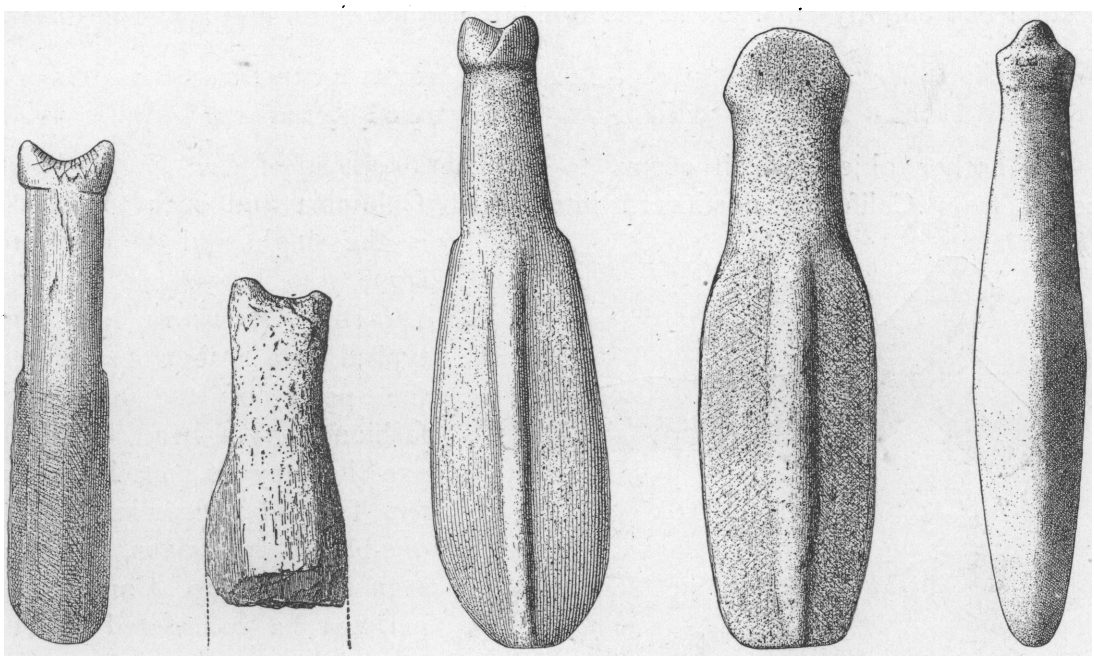
The clubs grouped together under Fig. 177, *c*, *d*, differ from the preceding in having a ridge in the middle of the broad surface of the blade. The tops of the first three clubs (*a-c*) are distinctly notched, while the one represented in *d* has a celt-like handle and the end cut off square. This type seems to occur in the region of Yakima, from which the specimens shown in *c* and *d* come, and Puget Sound, where the specimen shown in *b* was found.

A specimen which in some respects resembles two of the stone clubs

[1] See p. 175 of this volume.

[2] George G. Heye, in Boas Anniversary Volume (New York, Stechert, 1906), Plate XXX.

from Yakima, except that the blade is somewhat oval in cross-section, was found at Saanich (Fig. 178). This represents probably the northern limit of this type.



a *b* *c* *d* *e*

Fig. 177. Stone Clubs. $\frac{1}{4}$ nat. size.

a, From Yakima Reservation (collection of Mr. Louis O. Janeck, North Yakima, Wash.); *b* ($\frac{16}{76854}$), From Burton, Wash.; *c* and *d*, From Union Gap, below Old Yakima, Wash. (collection of Mr. Janeck); *e*, Collection of Dr. George Gibbs in U. S. National Museum, Cat. No. 726.

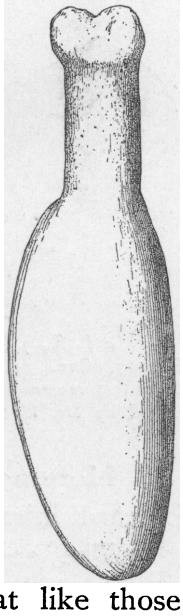


Fig. 178. Stone Club. From Saanich. (Provincial Museum, Victoria, B.C. Cat. No. 745.) $\frac{1}{4}$ nat. size.

Another club, made of serpentine, was found in the Yakima Valley. It is 19 mm. thick at the handle, which is the thickest portion of the object. The blade is paddle-shaped, lenticular in cross-section, and merges into the handle. The specimen is about 30 cm. long. Here may also be mentioned a club, which is a somewhat rectangular bar of slate, 41 cm. long, with rounded corners, somewhat larger at the end than at the handle, which is cylindrical, expanding at the tip. This specimen was found on Mayne Island at Plumper's Pass by Mr. T. Collinson in 1892, and is now in the Provincial Museum at Victoria (Cat. No. 748).

The last specimen in Fig. 177 (*e*) resembles, in the general shape of the blade, those represented in Fig. 175. Its knob-like handle is somewhat asymmetrical, and resembles in form rather the handles of pestles than those of the stone clubs heretofore described. The knob at the top is somewhat like those shown in Fig. 176, *b*, *e*. Its provenience is not known.

Still another specimen, apparently of similar type, but symmetrical, is in

the collection of Mr. Louis O. Janeck, North Yakima. The cross-section is lozenge-shaped, with bulging sides. The handle is nearly circular in cross-section and slightly enlarged at the top. It has no knob, and is not perforated.

Stone Axes.

Another object which seems to be characteristic of the North Pacific coast, from California northward into British Columbia and even to Alaska, is the single and double bitted stone axe represented in Figs. 179-182. As shown here, their typical form is that of an animal, the point of the axe being fashioned as a head, while the axe-bits may be conceived of as the feet of the animal. The one-bladed specimens, like those seen in Fig. 179, *b* and *c*, may perhaps be considered as representations of birds. The three specimens shown in Fig. 179 are characterized by grooves along the back of the axe.

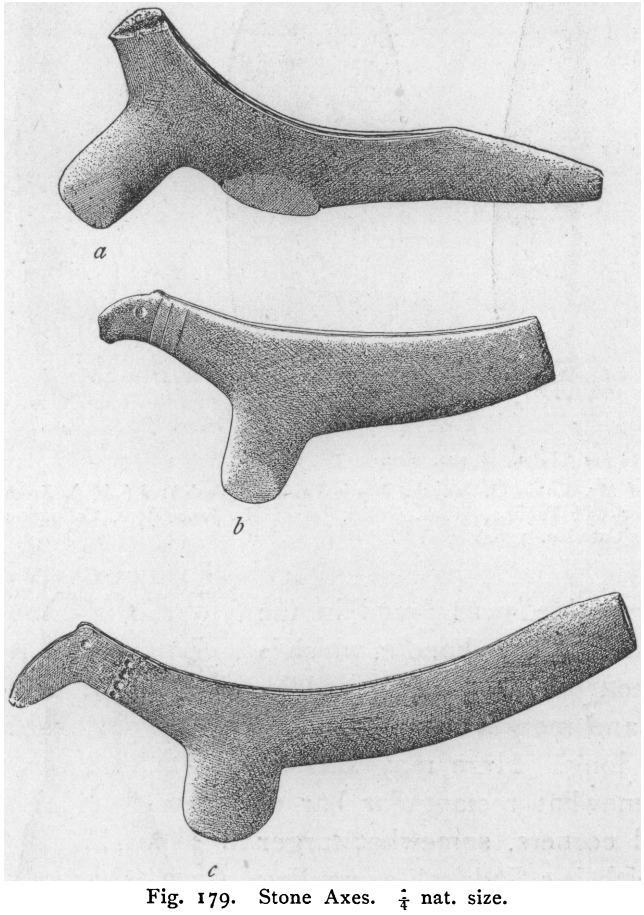


Fig. 179. Stone Axes. $\frac{1}{4}$ nat. size.

a ($\frac{T}{18442}$), *b* ($\frac{T}{18443}$). From Willamette Slough, Columbia County, Ore. (collected by Judge F. A. Moore); *c* ($\frac{T}{18441}$), Found 3 metres deep at Poorman's Bar, Scott River, Cal. (collected by Dr. F. G. Hearn).

Five more specimens of this type are represented in Fig. 180. The provenience of the first four of these is not definitely known, but they probably come from northern California or southern Oregon. The first two differ from the rest, in that they are perforated at the handle end. The axe represented in Fig. 180, *b*, is not worked out in the form of an animal, as are all the others.

More northern specimens are represented in Fig. 181; one (*a*) coming from Burrard Inlet, while the other (*b*) was found on the surface at Burton, Wash.

The specimen shown in Fig. 182 represents the extreme northern distribution of this type. It was collected by Lieut. G. T. Emmons at Chilkat, Alaska, and differs considerably from the other specimens. While all the other axes show no indication of representing an axe hafted in an antler or

stone handle, this one may readily be interpreted as an imitation in stone of a hafted stone axe, the distal end of the handle being in the form of an animal head. I am not at all sure that the tip of this specimen represents an animal

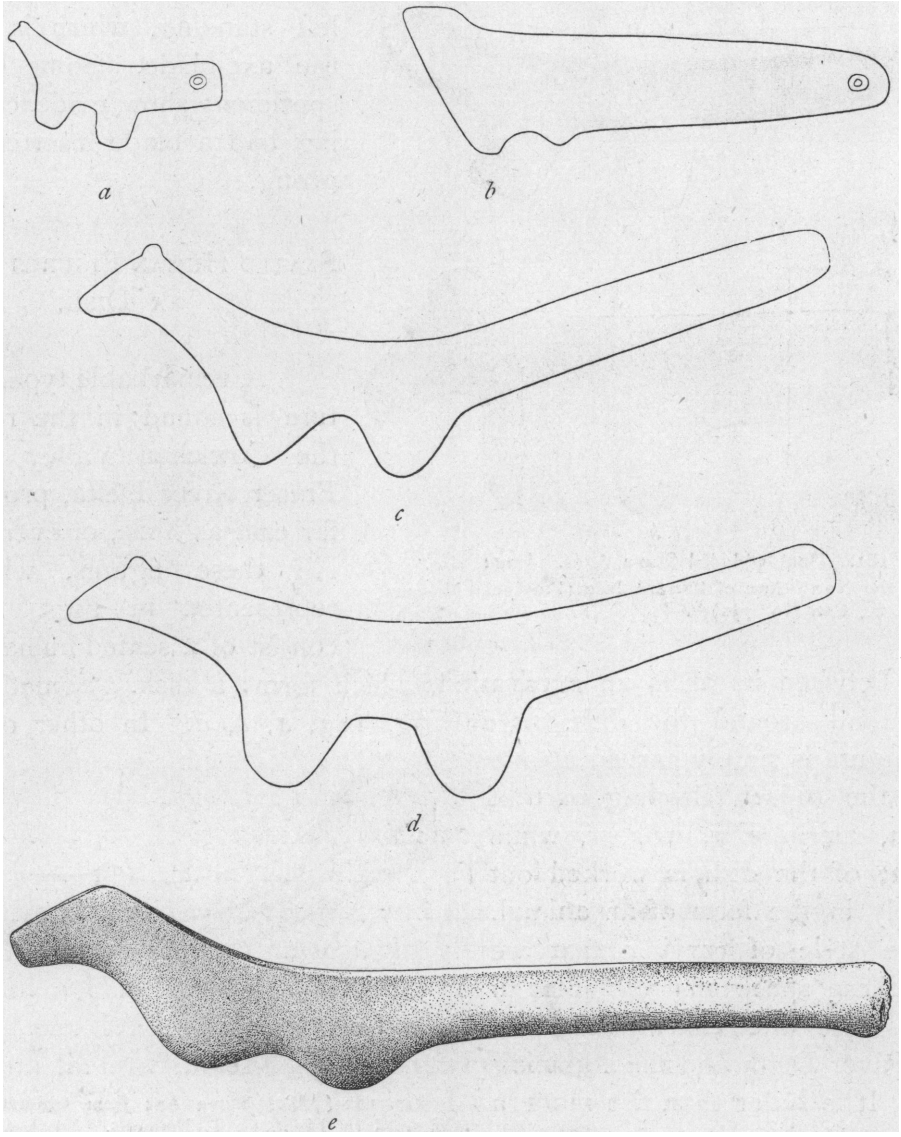


Fig. 180. Double-bladed Stone Axes. $\frac{1}{4}$ nat. size.

a-d, Probably from Klamath River (Peabody Museum, Cambridge, Mass., Cat. Nos. $\frac{R}{2162}$, $\frac{R}{576}$, $\frac{R}{2163}$, $\frac{R}{577}$; collected by Mr. Frederick H. Ringe; drawn from sketches by Mr. Charles C. Willoughby); *e* ($\frac{T}{18440}$), From Shovel Creek Springs, Klamath Valley, Cal. (collected by Mr. J. W. Gotcher).

head. In accordance with the general style of Alaskan art, it would seem more likely that the tip represents the eye, while the blade may represent the beak of a bird. If this is true, the similarity of the bitted Alaskan specimen to those from Oregon is perhaps accidental. This seems the more likely, since imitations of hafted implements made entirely of a single piece

of wood or stone, are not rare in the art of the Northwest coast. It may perhaps be mentioned that objects of similar form made of antler are also found in northern British Columbia. In these cases, in place of the bit, a small portion of a prong is left standing, which is used as the axe-blade. Some of these specimens show evidence of having had a blade inserted in this prong.

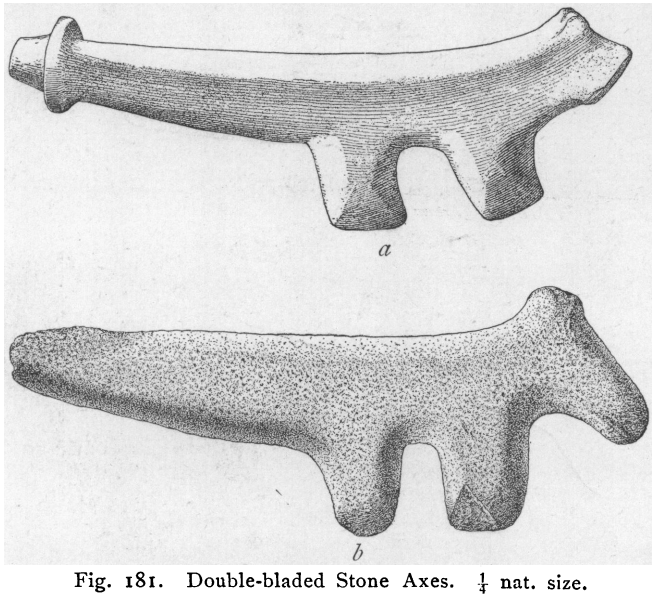


Fig. 181. Double-bladed Stone Axes. $\frac{1}{4}$ nat. size.
a, From the North Arm of Burrard Inlet (Provincial Museum, Victoria, B. C., Cat. No. 752); *b* ($\frac{16}{76\,52}$), From Burton, Wash.

Seated Human Figures holding a Dish.

A remarkable type of sculpture is found in the region of the Cowichan Valley and the Fraser River Delta, probably as far east as Yale, or even Lytton. All these figures, which are represented in Figs. 183-185, consist of a seated human figure, holding between its arms an excavation, which forms a dish. Sometimes the arms extend around the dish, as in Fig. 183, *a*, *b*, *d*. In other cases the human figure is simply carved at one end of the object, clasping part of the dish, as in Fig. 183, *c*, while the front of the dish is worked out separately in the form of an animal.

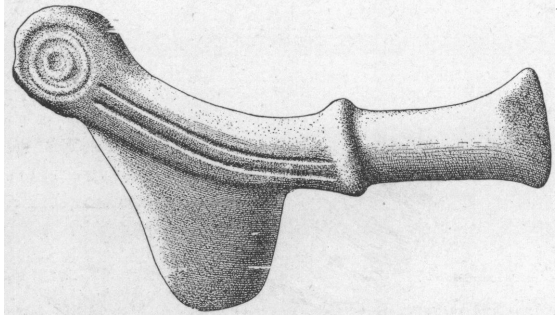


Fig. 182 ($\frac{19}{7\,1\,5}$). Stone Axe from Chilkat, Alaska. Collected by Lieut. G. T. Emmons. $\frac{1}{4}$ nat. size.

The style of carving that we find in these specimens resembles in general style the carvings of the Fraser River Delta and the adjoining region. It is ruder than the modern carvings of Alaska and northern British Columbia, and lacks the surface decoration which is so characteristic of the carved objects of the northern part of the coast. Nevertheless the treatment of the hair in Fig. 183, *b*, the curve of the eyes, and in some cases the treatment of the mouth, recall the characteristic Pacific coast art.

Most of these figures have a small knob on the head, apparently representing the dressed hair. In some specimens the septum of the nose is perforated, as in Figs. 183, *a*, *b*, 185 *c''*. The second of these specimens has a slight zigzag decoration on the upper arms; while the one shown in Fig. 184, *a*,

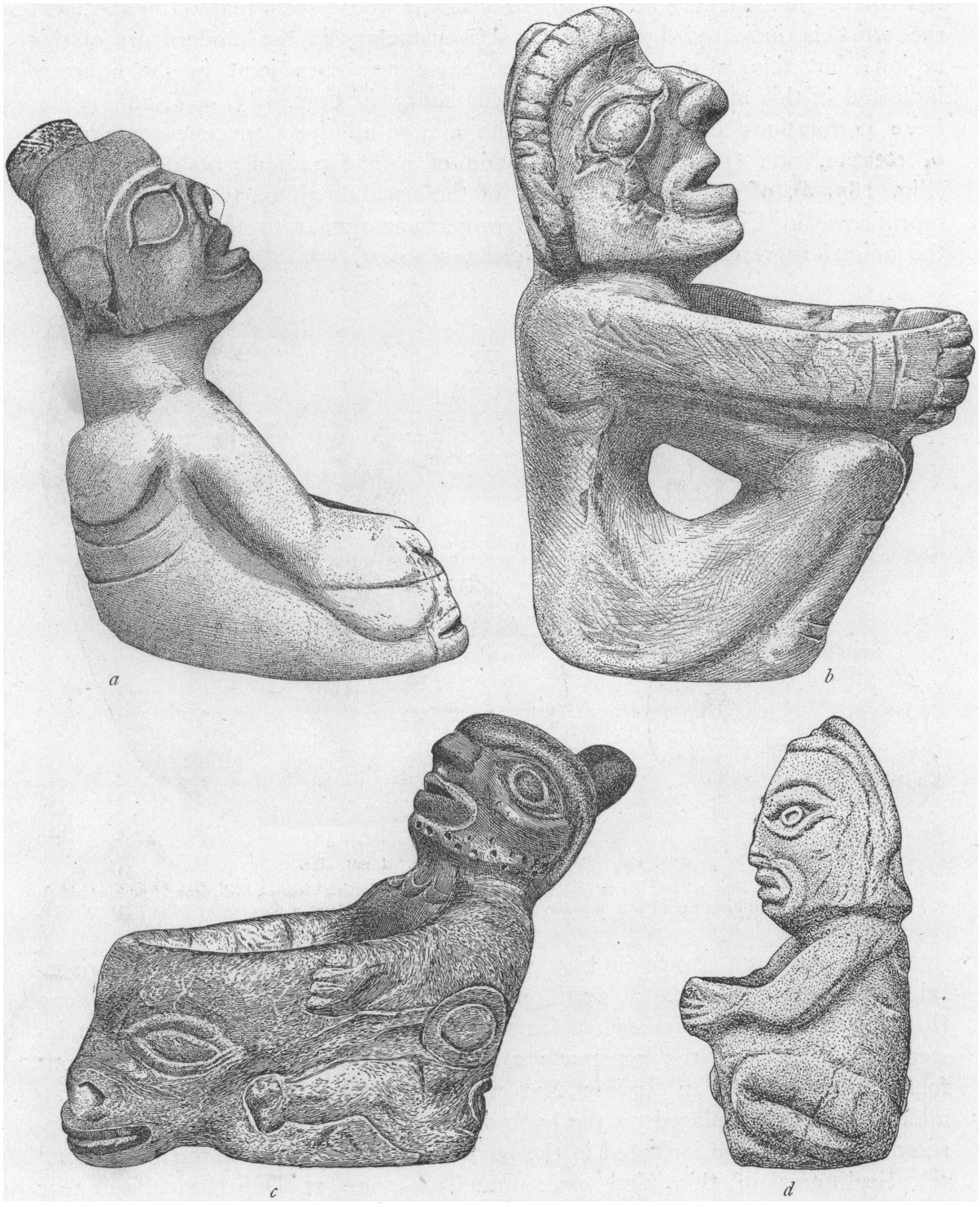
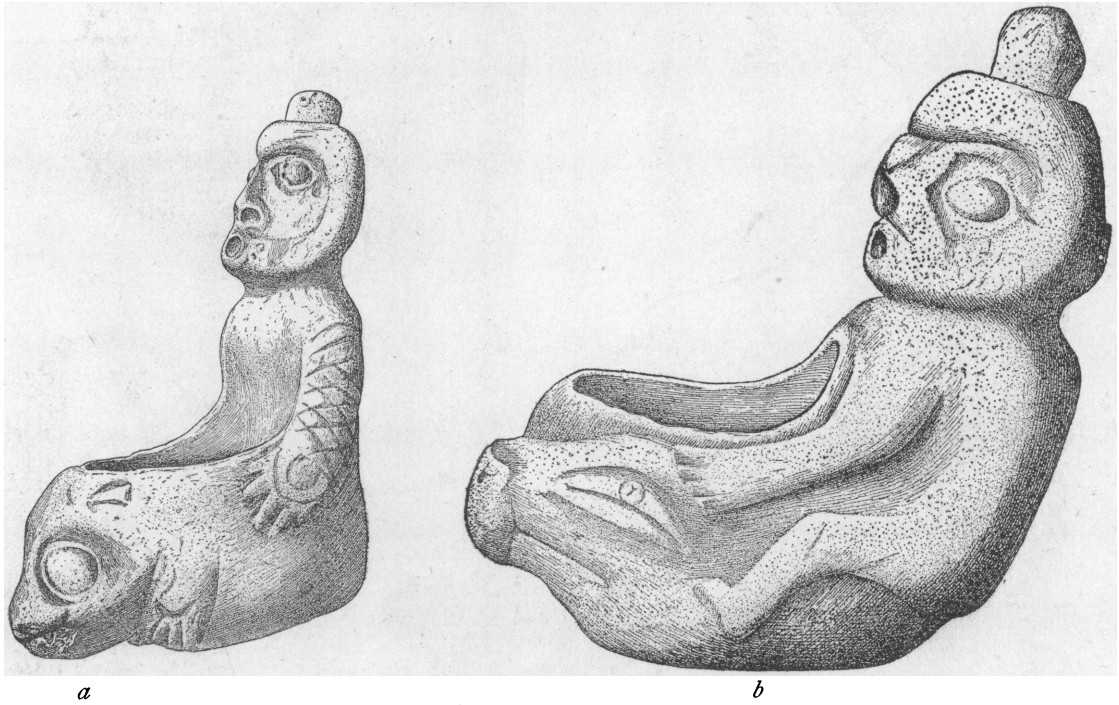


Fig. 183. Carved Stone Dishes.

a, Made of steatite, from Saanich Peninsula (Field Museum of Natural History), $\frac{1}{4}$ nat. size; *b*, Made of steatite, from Cowichan Bay (British Museum, Cat. No. 96-1-25-1), $\frac{1}{2}$ nat. size; *c*, Made of steatite (Free Museum of Science and Art, University of Pennsylvania, Cat. No. 11160), $\frac{1}{3}$ nat. size; *d*, Made of gritstone, from Saanich Peninsula (from a photograph taken by Dr. C. F. Newcombe), $\frac{1}{3}$ nat. size.

has coarse cross-hachure at the same point. It would seem that in this specimen the wrist is indicated by an eye, as is customary in the modern art of this region; but this is not quite certain, since no other joint in the figure is indicated in this manner. The specimens shown in Figs. 183, *a*, *b*, and 184 *b*, have perforations in the ears. While almost all these specimens are made of steatite, one (Fig. 183, *d*) is made of a fine-grained gritstone; another (Fig. 185, *b*), of sandstone. Instead of the usual knob on the head, the dish reproduced in Fig. 183, *d*, has two projections similar to the typical ears of the animal representations of the Northwest coast.



a *b*

Fig. 184. Carved Steatite Dishes. $\frac{1}{2}$ nat. size.

a, Probably from Fraser River Delta (collection of Hon. Justice Martin, Victoria, B.C., drawn from cast $\frac{16}{17}$); *b*, From road-cut in shell-heap near North Saanich (Newbigging collection, from a drawing by Miss E. H. Woods).

The specimen shown in Fig. 184, *b*, has both a vertical and a horizontal perforation through a small projection at the occiput. Another one (Fig. 185, *a*) differs somewhat from all the others. It has a depression instead of a knob on the head, which must be compared with the depressions found in many human figures that will be described later on. Further, an additional figure is placed on the back of the human figure. This probably represents an animal, as indicated in the reconstruction suggested in the illustration.[1]

Sculptures of this kind were found, — one at Departure Bay, near Nanaimo; one in Cowichan; another one probably in Fraser River Delta; three on Saanich Peninsula; one twenty-four miles above Yale. One specimen

[1] Compare with specimen from the same valley, shown in Vol. I, Fig. 380, p. 431.

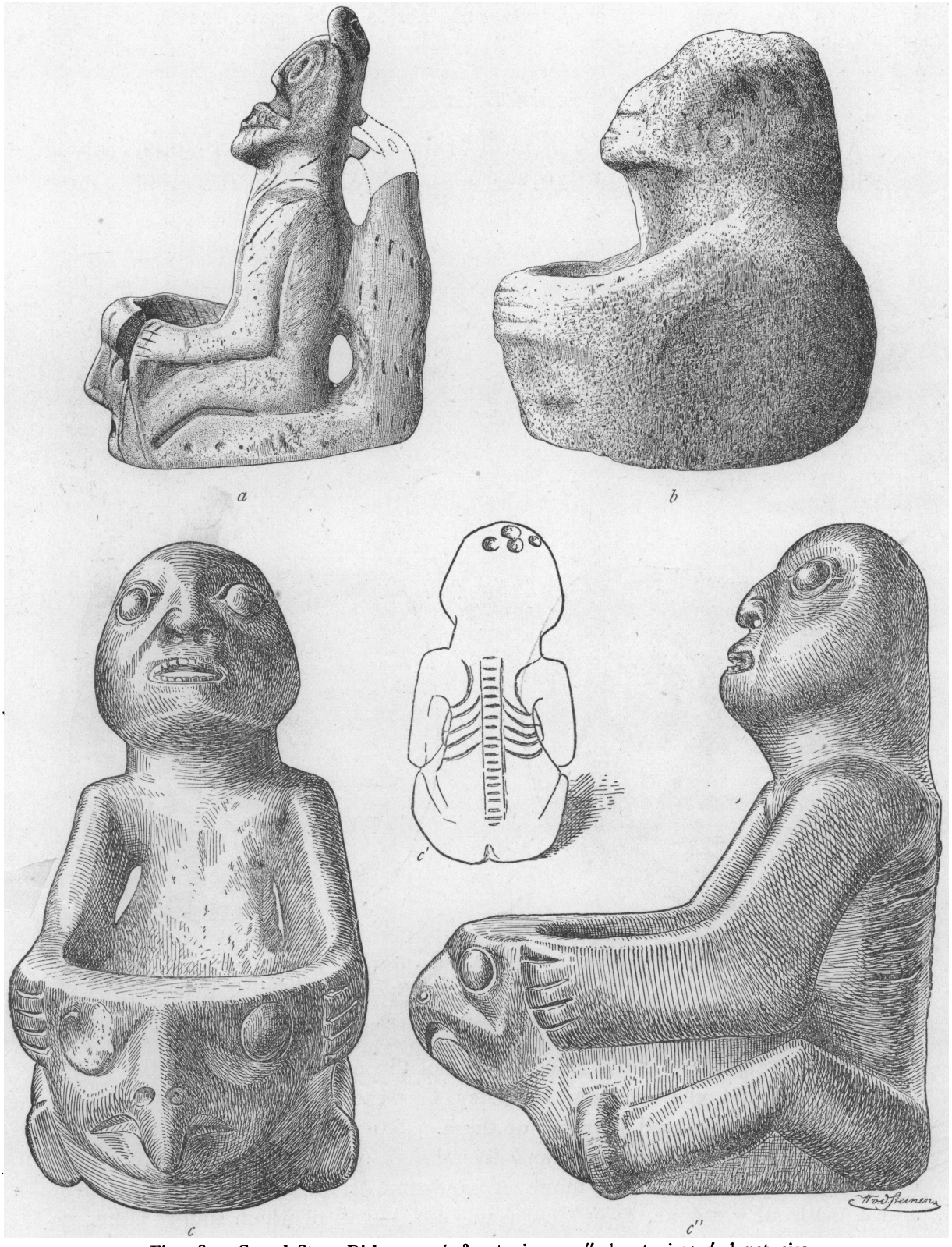


Fig. 185. Carved Stone Dishes. *a*, *b*, $\frac{2}{5}$ nat. size; *c*, *c''*, $\frac{1}{2}$ nat. size; *c'*, $\frac{1}{4}$ nat. size.

a, Made of steatite, from west side of Fraser River, $1\frac{1}{2}$ miles north of Lytton (collection of Mr. George G. Heye, New York, Cat. No. 1847); *b*, Made of sandstone, from Departure Bay, Vancouver Island (Provincial Museum, Victoria, B.C., Cat. No. 620); *c*, Made of dark-green steatite, from 24 miles above Yale (Royal Ethnographical Museum, Berlin, Cat. No. IV B 1700).

is said to have come from a place a mile and a half above Lytton, and one is of unknown provenience.

Stone Sculptures.

Among the larger stone sculptures of this area, dishes and mortars carved in animal forms are not of rare occurrence. While, on the whole, these

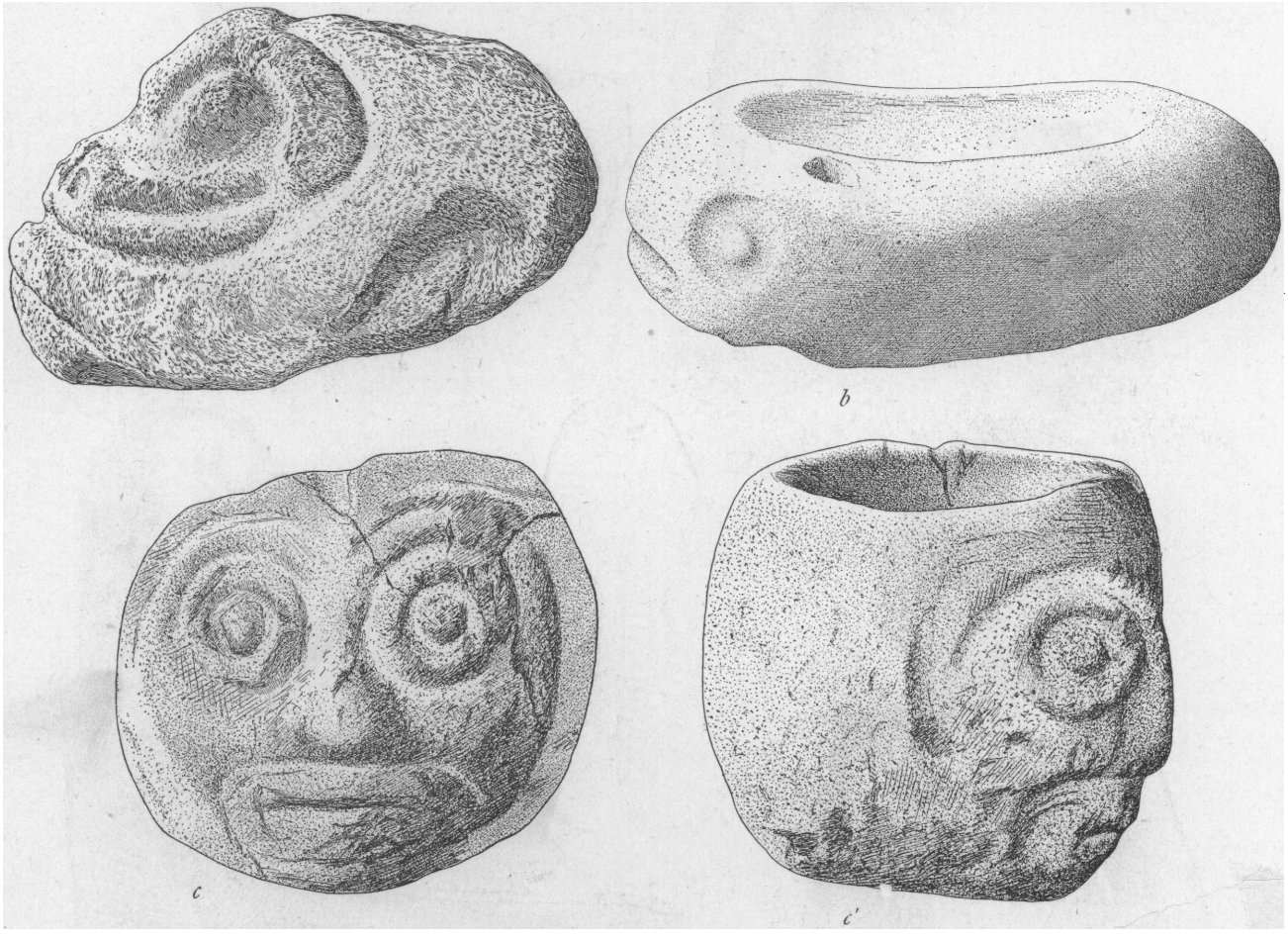


Fig. 186. Stone Dishes. *a*, *b*, $\frac{1}{4}$ nat. size; *c*, $\frac{1}{3}$ nat. size.

a, From British Columbia (C. P. Wilcomb loan collection, Memorial Museum, Golden Gate Park, San Francisco, Cal., Cat. No. 6182 W); *b* ($\frac{16}{9\,8\,7\,6}$), From Eagle Cove, San Juan Island (collected by Mr. W. H. Thacker); *c*, From Cowichan Gap (Field Museum of Natural History, Chicago, Cat. No. 85323).

resemble in general style the stone figures of the modern Indians of the North Pacific coast, the characteristic tendency of treating the whole object as an animal is not pronounced in most of these.

In Fig. 186 one sculpture and two dishes or mortars are shown, — *a*, of unknown provenience; *b*, made of sandstone, from the San Juan Islands; and *c*, made of gritstone, from Cowichan Gap, — all of which simply either represent an animal or human head, or are decorated at one end with such a head.

The material of the first specimen (*a*), as well as the character of work, so closely resemble those of specimens found in the Columbia River Valley, from Umatilla to the mouth of Hood River, that it seems quite possible that this specimen comes from that region. The depression in it is very small. According to statements of the Indians of the Fraser Delta, sacred herbs were sometimes crushed in such depressions at certain ceremonies.[1] A type of mortar quite similar will be found illustrated in Vol. I, Fig. 153, p. 204, the provenience of which is probably somewhere in southern British Columbia. To the same class of objects also belong the mortars represented in Figs. 53 *b* and 54 *a* (pp. 184 and 185) of this volume, one of which was found in the Fraser Delta, and perhaps also the specimen represented in Fig. 97, *b* (p. 281) of this volume.

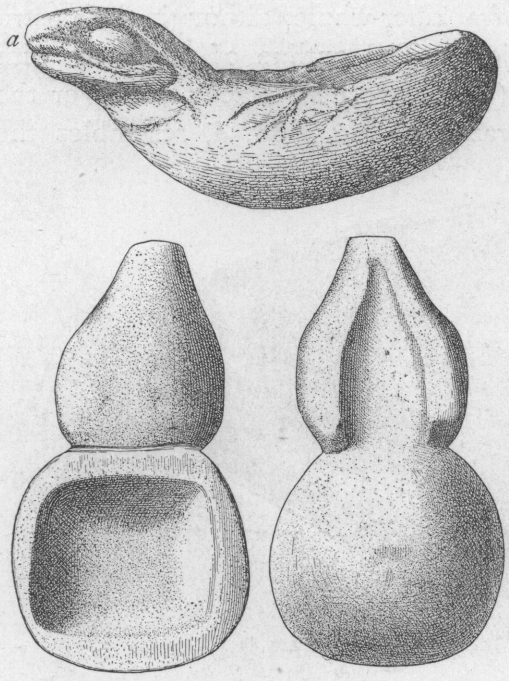


Fig. 187. Stone Mortars. $\frac{1}{4}$ nat. size.

a, From Victoria (Provincial Museum, Victoria, B.C., Cat. No. 615); *b*, From Cedar Cove, Burrard Inlet, B.C. (collection of Mr. D. Leatherdale, Vancouver, B.C.; from a photograph).

The specimen illustrated in Fig. 187, *a*, is similar to the preceding, except that the head is set off more clearly from the body of the dish or mortar. Another dish of similar type is shown, from above and below, in Fig. 187, *b*. Here also the bowl is not carved so as to indicate an animal figure; but the head and neck are clearly set off, the depression in the lower jaw is well indicated on the lower side, while the eyes are marked only by slight depressions.

Fig. 188. Stone Mortars.

a ($\frac{16}{5725}$), From road-cut in shell-heap near North Saanich (collected and presented by Mr. J. Newbigging), $\frac{1}{4}$ nat. size; *b* ($\frac{16}{8999}$), Cast, from North Saanich (Provincial Museum, Victoria, B.C.), $\frac{1}{2}$ nat. size.

The specimens shown in Figs. 188-190 resemble the modern art of the

[1] See p. 281 of this volume.

North Pacific coast more strictly, in that the dish or mortar is made a part of a complete animal form. The very shallow grindstone or mortar shown in Fig. 188, *a*, is given distinctly the form of a killer-whale, although the nostril consists of a natural depression in the object. The outline of the body with the dorsal fin, and the blades of the tail (which are here placed one over the other), are unmistakable. The dish illustrated in Fig. 188, *b*, resembles the

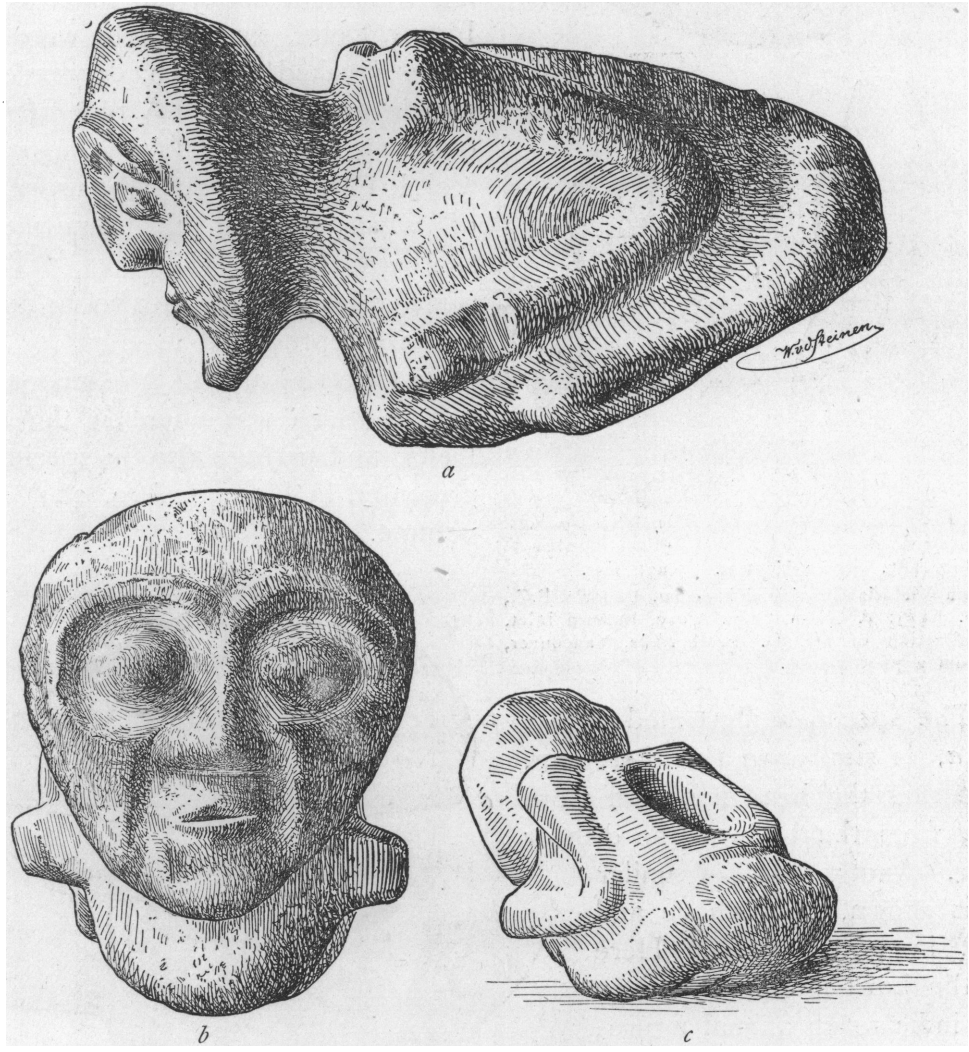


Fig. 189. Stone Mortar. Found near Yale. (Royal Ethnographical Museum, Berlin, Cat. No. IV B 1698). *a*, *b*, $\frac{1}{2}$ nat. size; *c*, $\frac{1}{4}$ nat. size.

common representation of the sea-otter swimming on its back, which is so characteristic of the carvings of modern Alaska. The dish clearly resembles an animal lying on its back. The notched tail, and the grooved figure on the sides, suggest that a seal or some similar sea-animal may have been meant, although the head rather resembles a bird-head. Still the whole execution is so crude, that it is quite possible that a sea-animal may have been intended

The two following figures (Figs. 189 and 190) illustrate well the characteristic elaboration of the whole object in animal form. The first of these specimens evidently represents a human being with bent arms and legs, while the second figure seems more complicated. The large head at one end and the fore-feet, are perfectly clear; but the carving on the lower side is somewhat obscure. When looking at the principal figure at the tail-end, a pair of additional, three-toed feet seem to appear, and on the back of the head is a peculiar elliptical "eye," while still lower down there is an angular design. It would almost seem as though a second animal were represented on the lower side of this object.

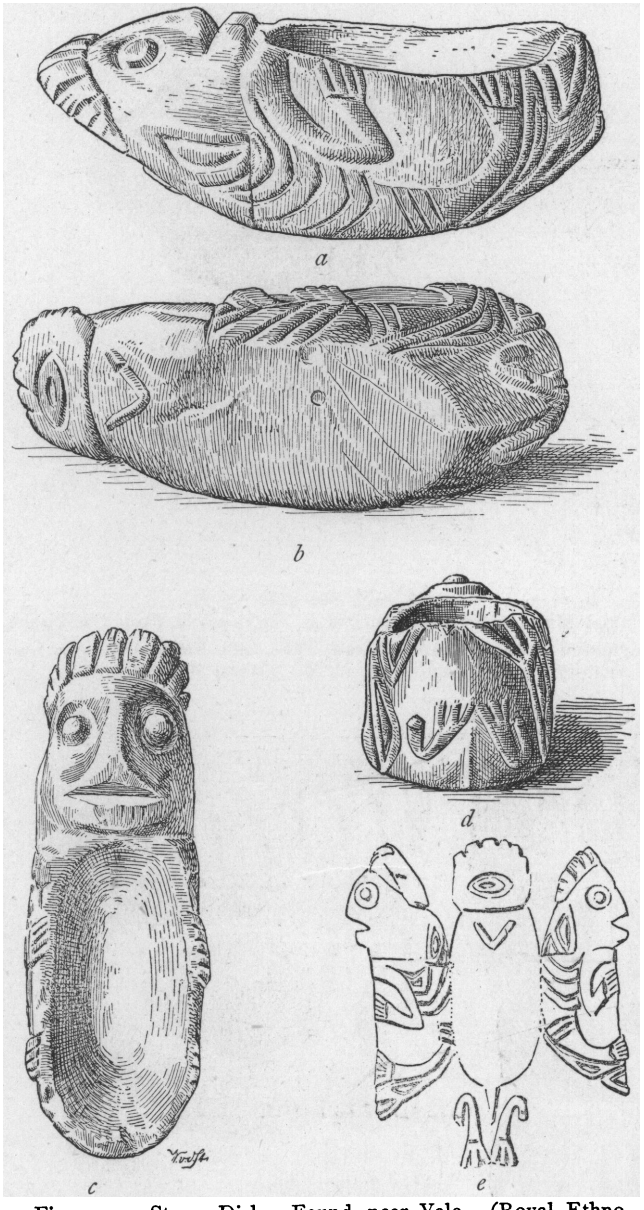


Fig. 190. Stone Dish. Found near Yale. (Royal Ethnographical Museum, Berlin, Cat. No. IV B 1702.) *a-d*, ½ nat. size; *e*, ¼ nat. size.

In Fig. 191 a number of carvings are combined which in material and form recall the Lillooet specimens illustrated in Figs. 97 (p. 281) and 68 (p. 204) of this volume. The first three of these are made in volcanic rock, similar to the Lillooet specimens, while the last is made of steatite.[1] Their provenience is Victoria and the Lower Fraser River. The specimen represented in *b* has a median depression in the throat; and on each side of it, near the lower edges of the jaw, is a groove, which may perhaps represent gills. At the end opposite the head, the tail of the animal is clearly recognized. The small mortar shown in *c* has geometrical designs similar to those shown in Fig. 97, *a* (p. 281) of this volume.

Two sculptures representing human heads with dish-like depressions on top

[1] Dr. Charles F. Newcombe claims that the rock of which the first is made comes from Bella Coola, while that of the second is foreign to the Lower Fraser River, whence the specimen is said to come.

are shown in Fig. 192. The first of these is made of grayish gritstone, and was collected below the mouth of the canyon of the Fraser River. The second one is of greenish-black stone, probably steatite. In form the two specimens are very much alike.

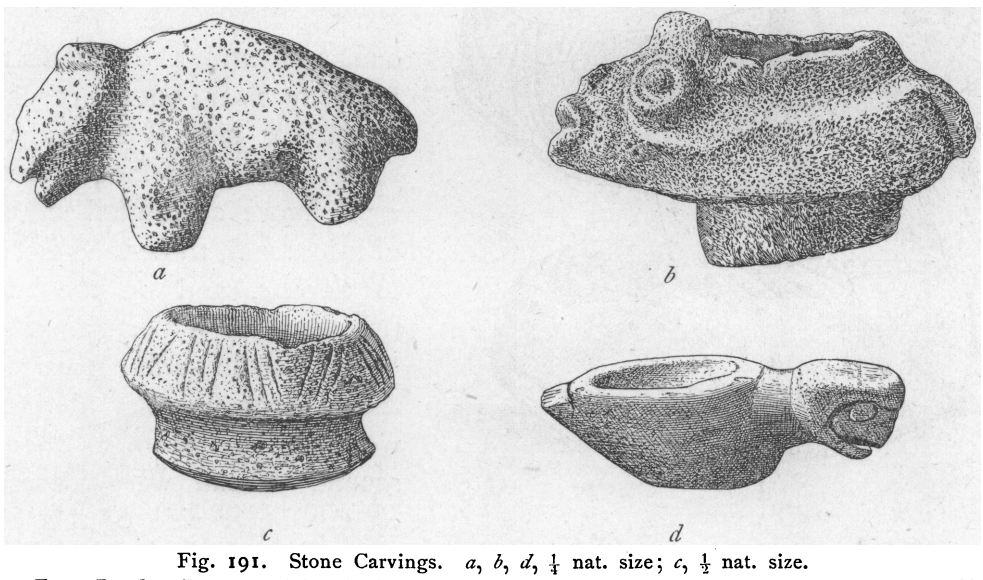


Fig. 191. Stone Carvings. *a*, *b*, *d*, $\frac{1}{4}$ nat. size; *c*, $\frac{1}{2}$ nat. size.

a, From Beecher Bay, near Victoria (Provincial Museum, Victoria, B.C., Cat. No. 250); *b*, From Chilliwack River, B.C. (C. P. Wilcomb loan collection, Memorial Museum, Golden Gate Park, San Francisco, Cal., Cat. No. 6367 W.); *c* ($\frac{16.1}{130}$), *d* ($\frac{16.1}{132}$) Casts, from the vicinity of Yale (collection of Mr. Daniel Ashworth).

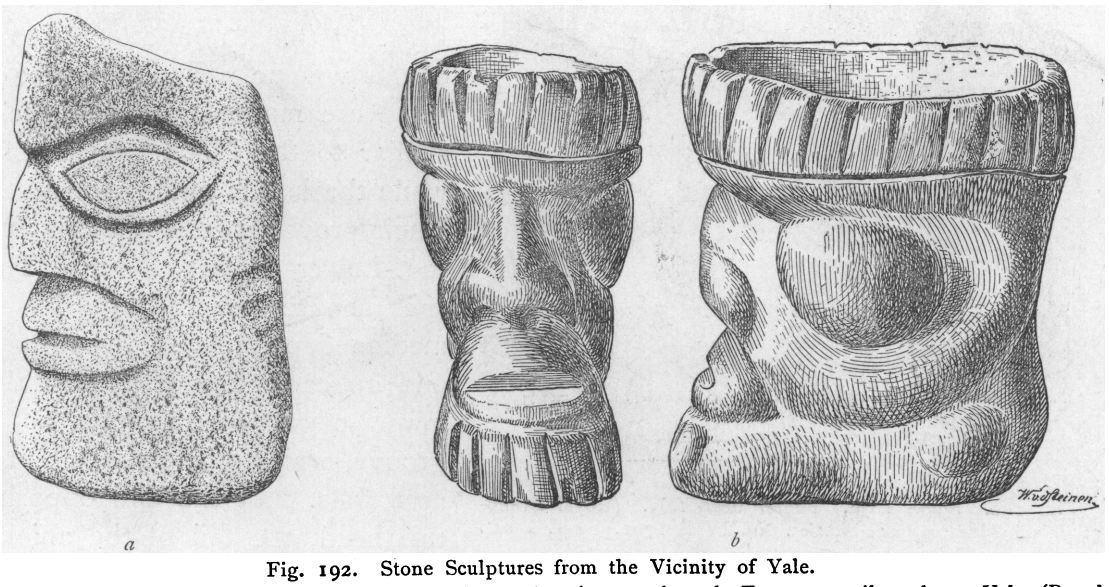


Fig. 192. Stone Sculptures from the Vicinity of Yale.

a, From a photograph by Dr. C. F. Newcombe, $\frac{1}{4}$ nat. size; *b*, From 24 miles above Yale (Royal Ethnographical Museum, Berlin, Cat. No. IV B 1701), $\frac{1}{2}$ nat. size.

A few elaborate stone objects carved to represent animals may be mentioned here. Those shown in Fig. 193 are all from the Lower Fraser River. The first and second evidently were used for practical purposes, which,

however, are not known. The representation of the bird is quite distinct. The last one is carved from a gray slate. There is a perforation through the upper end, which has been broken out. This perforation was made by cutting from each end, and is somewhat elliptical in form. This specimen is so clearly of the same type as the art of the modern North Pacific coast

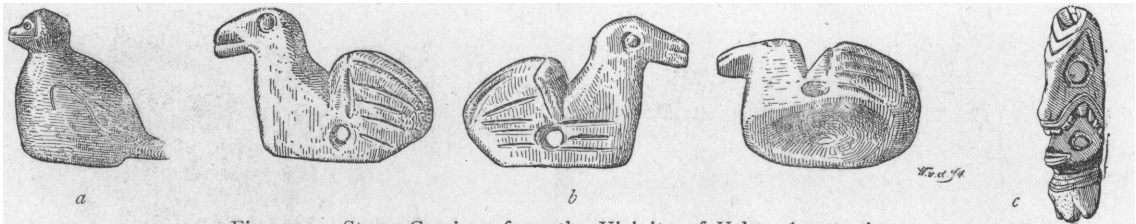


Fig. 193. Stone Carvings from the Vicinity of Yale. $\frac{1}{2}$ nat. size.
a, *b*, Royal Ethnographical Museum, Berlin, Cat. Nos. IV. B 1749, 1703; *c* ($\frac{1}{1}\frac{6}{3}\frac{1}{7}$), Cast (collection of Mr. Daniel Ashworth).

Indians, that there can be little doubt that it was either imported from northern British Columbia or copied. The gaping mouth of the wolf-like figure, holding an upright head in its mouth, is a motive which occurs with very great frequency in the modern carvings of that area. On the whole, the apparent roughness of execution, and the peculiar method of indicating the ears by incisions rather than by relief, suggest that perhaps the specimen may be an imitation of northern work made by southern Indians. Since this specimen was purchased from an Indian woman at Yale by Mr. Daniel Ashworth, there is no reason to assume that it is of any considerable antiquity.

In connection with this sculpture may be mentioned a carving in antler (Fig. 194). This specimen was found on the beach close to an old Indian village site near Deer Harbor, Orcas Island, and may have been used as a mat-smoother. It somewhat resembles a toggle[1] (see Vol. I, Fig. 114, p. 158). It would seem that the whole object represents an animal, the head of which is seen at the right end. Apparently, another head is represented, with arms which grasp the body of the animal. In the centre, on the concave side, is a circular depression corresponding to a perforation found in the Lytton specimen referred to before.

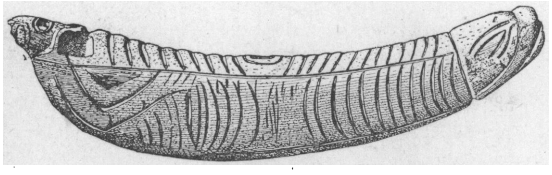


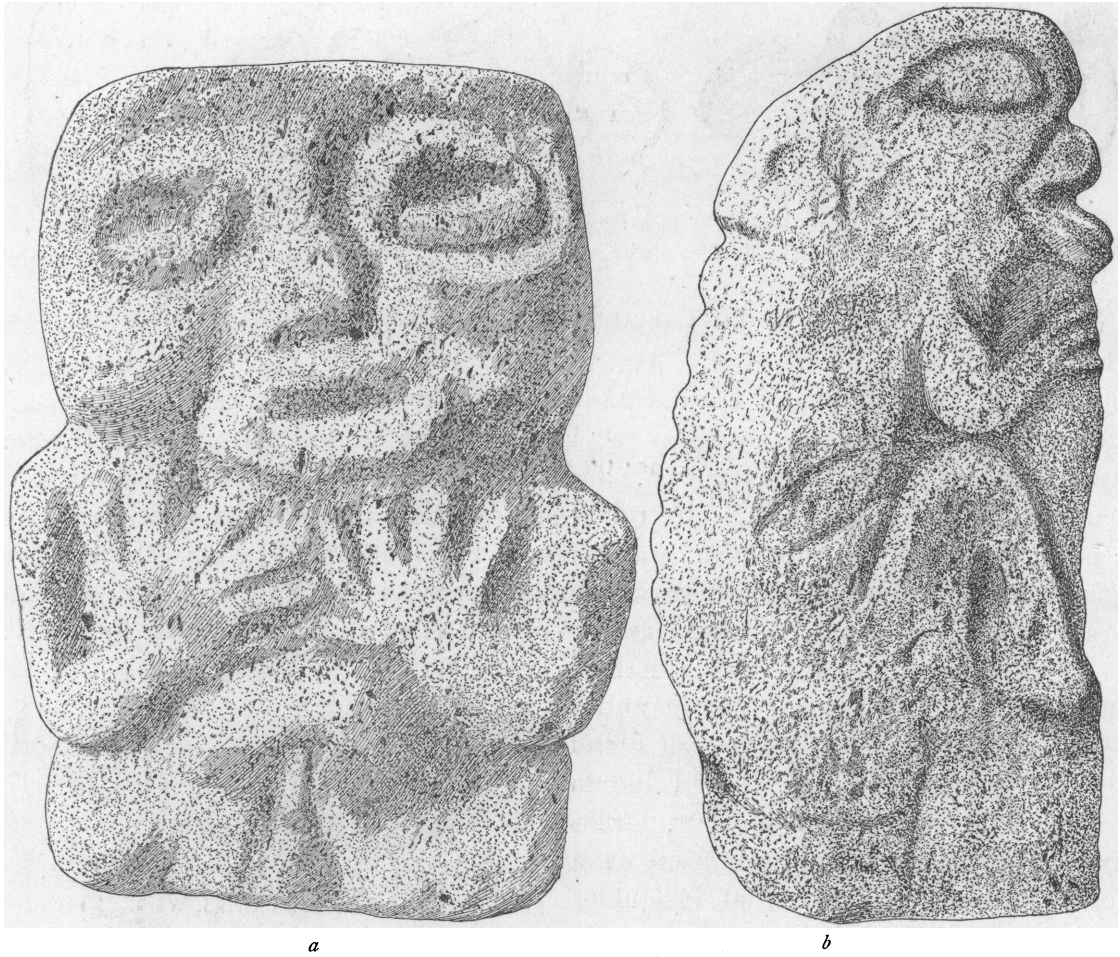
Fig. 194 ($\frac{1}{9}\frac{6}{1}\frac{6}{2}$). Animal Form carved in Antler. Found on the Beach, Orcas Island, Wash. $\frac{1}{2}$ nat. size.

In the area of the Lower Fraser River, southeast of Vancouver Island, and on the northern part of Puget Sound, a number of stone sculptures have been found, provided with depressions on top, which were probably used for sacrificial purposes. Thus, the Indians at Musquiam, a village on the north side of the mouth of the north arm of Fraser River, have a large stone of grotesque shape which has been worked slightly to make it represent a human

[1] See Vol. I, p. 442.

figure. In the top is a small pit. This stone has a name. Sacrifices are put into the pit when the Indians desire supernatural help, as in fishing.

Evidently the stone carving represented in Fig. 195, *a*, which has a dish on top, is similar to this object. The figure is made of vesicular lava, and recalls the style of art of the Lower Lillooet region.



a *b*

Fig. 195. Stone Sculptures.

a ($\frac{16}{1080}$), From near Deception Pass, collected by Miss Alcie B. Engle, $\frac{1}{2}$ nat. size; *b* ($\frac{16}{7070}$), Cast, said to have been found near Sumas, Wash. (Museum of the University of Washington, Seattle, Wash.), $\frac{1}{8}$ nat. size.

Another figure of the same type is represented in Fig. 195, *b*. It is said to have been ploughed up on the Fraser Plains, near Sumas, Wash. This figure also has a pit on top of the head. Mr. Charles Hill-Tout refers to a large stone carving,[1] and it is not improbable that the carving mentioned by him is the specimen here figured. Mr. Hill-Tout says that the Chilliwack formerly possessed a large stone statue representing a human figure. It was owned by a certain family, and taken to the neighboring Sumas tribe by a woman who married into that tribe. A few years ago some enterprising person

[1] Report of the British Association for the Advancement of Science for 1902, p. 367.

bought it and shipped it into Washington State, where it was exhibited for a time in a dime museum. According to the belief of the Chilliwack, this statue was the work of the Transformer Xäls, who had transformed into stone a man and his wife who had displeased him.

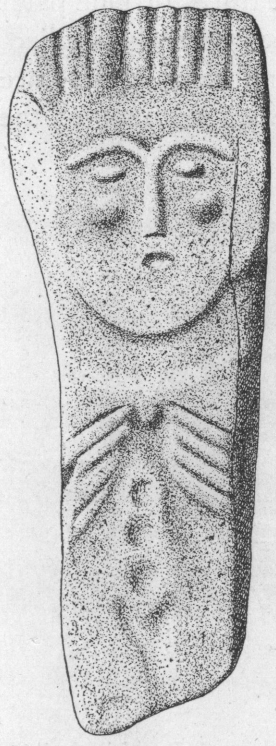
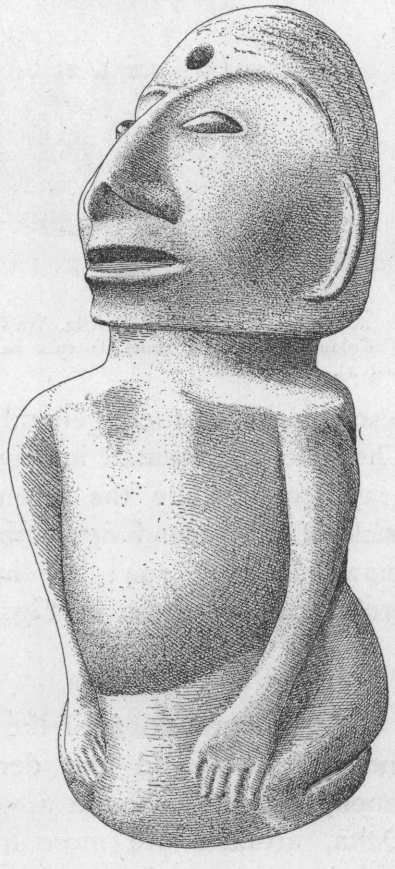


Fig. 196. Stone Sculpture. Found 20 Miles below Portland, Ore. (Oregon Historical Society, Portland, Cat. No. 218, List 6). $\frac{1}{8}$ nat. size.

Another specimen with a pit in the head is shown in Fig. 196. It was found on the Columbia River, about twenty miles below Portland. The specimen is apparently made of part of a basaltic column. The style of carving appears quite different from the specimen previously described. It will be noticed that the sternum, ribs, and legs are indicated. There are daubs of red paint on it, which are most prominent on the sternum, body, lower part of the neck, and immediately above and below the eyebrows.

b



a

Fig. 197. Stone Sculptures.

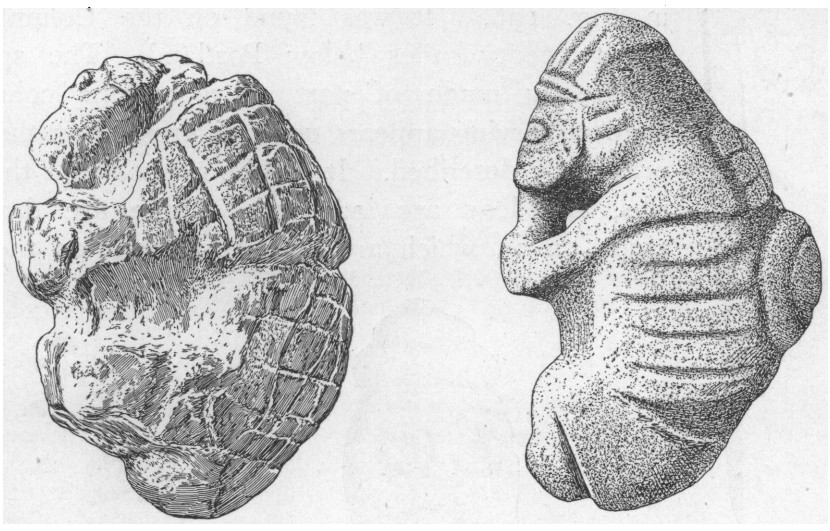
a ($\frac{16}{11 \times 31}$), Cast, original found "between Vancouver Island and the mainland" (Museum of the University of Washington, Seattle), $\frac{1}{2}$ nat. size; *b*, From Wapato Island (Oregon Historical Society, Portland, Ore., Cat. No. 27 [10027], List 3), $\frac{1}{8}$ nat. size.

Somewhat different in style is the human figure shown in Fig. 197, *a*. I have not the original at hand; but, judging from the color of a cast in the United States National Museum, it is apparently made of soft yellowish-gray stone. There is a perforation through the forehead. This specimen is much smaller than the others, and probably served a different purpose.

In Fig. 197, *b*, is represented a figure which in its artistic style resembles the sculptures from northern Puget Sound and the

Fraser Delta. It differs, however, in being carved with almost the same design on both sides, the two human figures thus represented being divided from the neck upward by a longitudinal groove. There are traces of blue paint in the eye-pits on one side, but possibly this paint has been recently applied.

Two sculptures, from Seattle and near Wapato Island respectively, are shown in Fig. 198. They are placed here side by side on account of the



a *b*

Fig. 198. Stone Sculptures.

a ($\frac{16}{9430}$), Cast, from Seattle, Wash. (collected by Mr. P. B. Randolph), $\frac{1}{4}$ nat. size; *b*, Found in the bank of Columbia River, a short distance below Wapato Island (Oregon Historical Society, Portland, Cat. No. 219, List 2), $\frac{1}{8}$ nat. size.

resemblance of their general form, although in detail they differ considerably. The one represented in Fig. 198, *a*, is apparently made of a soft yellowish-gray stone, while the second is of vesicular lava. The peculiar ring on the back of the second figure may be compared to a similar one on the specimen shown in Fig. 194; the hump, to the one in Fig. 196; and the spine-like projections, to those in Figs. 185 *c* and 195 *b*.

Conclusions.

The composition of the shell-heaps here discussed is almost exclusively of the well preserved and decomposed shells of clams and mussels, scattered among which are found a very few artifacts. In the shell-heaps of the Fraser Delta, artifacts are more frequently found than in those of the sea-beaches; and human remains, which are rarely seen in the seacoast shell-heaps, are often discovered. The artifacts are most numerous in the black layers. They are more rare in pure shell-layers and in the deeper parts of the heaps. The objects most commonly found in the shell-heaps are points chipped from stone, or ground from slate or bone, and used for arrows, knives, harpoons, or spears; mortars made of stone, and pestles or hammers of stone; fish-knives rubbed

out of slate; wedges made of antler; celts of stone, celt-handles made of antler; whetstones or grinding-stones; awls and needles of bone; and engraved and carved objects made of bone, antler, and stone.

The extreme scarcity of archæological specimens in the very extensive shell-heaps of the sea-beaches is what we might expect if the early people depended as largely as do the present natives upon cedar products, easily disintegrated by the warm, moist climate.

The implements used in securing food include projectile points, of which those ground out of stone or bone are more numerous than those chipped out of stone. Many points were used for fish-hooks and harpoons. Net-sinkers made by perforating pebbles were also found.

For the preparation of food, pestles and mortars were used. Fish-knives made of slate, many of them broken, but like those still used by the Indians of this neighborhood, were frequently found. On the western and northern parts of Vancouver Island the typical form of pestle is provided with a striking-head at each end, the faces of which are nearly parallel, and the upper and lower ends somewhat alike, except that the latter is the larger. The stone pestles of Puget Sound, like the typical form of that implement found at Lytton, have hat-shaped tops and striking-heads, or, like those of northern Vancouver Island, have a striking-head at each end, the faces of which are nearly parallel, one being smaller than the other. In the Fraser Delta many types of hammers are in evidence, as one might expect if the locality were visited by as many tribes in the past as at present. The mortars were sometimes decorated by engraving or sculpture.

No pottery was made in the region; but stones burned and crackled, evidently by being heated and dropped in baskets or boxes for boiling food, are found in all the shell-heaps.

House sites are sometimes indicated in the shell-heaps by an embankment surrounding a large rectangular level space. These are undoubtedly to be found only in the modern heaps, but have been obliterated at older sites. They suggest that the old houses were immense in size, and probably made of large planks split from cedar. The positions of the shell-heaps, which it will be remembered mark the village sites, show that the houses of the villages were usually arranged in a single row, although indications of several rows have been found. These villages extended along the shore. Those on the sea-beaches were near the mouth of a fresh-water stream, which provided both water for domestic purposes and a mud flat where shell-fish could be obtained. The villages apparently faced the sea, which was the natural highway. Leading up to high-water mark, opposite village sites known to have been inhabited until recently, may be seen run-ways cleared of such large bowlders as would be injurious to canoes landing at the village. Traces of such run-ways at sites long uninhabited have been obliterated.

The size of these run-ways suggests that huge canoes were used. The canoes were undoubtedly each cut from a single cedar-tree, like those used by the present natives.

For building houses, wedges and like tools, made of cedar and other wood long since decayed, were probably used, as they are by the living Indians of the region. Some wedges were made of antler. Tools made of bone of the whale, seal and other animals, of antler and stone, are frequently found. Some of the adzes made of stone were hafted in cylindrical pieces of antler. Whetstones are frequently found. The stone pestles were no doubt used as hammers in driving wedges, and in general carpenter-work, quite as much as for preparing food. Awls and needles made of bone were used in women's work. Some of the needles were flat.

The finding of choppers made of bone, for preparing cedar-bark, exactly like the implements used to-day in the manufacture of cedar-bark mats and clothing, is one fact which suggests that the culture of the ancient people resembled that of the present natives.

The art and technique of objects found in the deepest layers of the shell-heaps seem to be better than those exhibited by artifacts of the Indians living in the area to-day. A small carved mask made of a kind of soft coal rivals in artistic merit the best work of any of the existing natives of the Northwest coast. The art included incised geometric designs, which are rarely found among the present natives, but are common among both the old and the modern artifacts of the interior. Incised lines were sometimes added to certain objects to make them represent in detail animal forms, which their utilitarian shape already made them resemble in general. Pecked petroglyphs of realistic but not of pictographic character were seen near Nanaimo. Purely pictographic art was not observed; and the circle-and-dot design was not found on archæological specimens, although it is common among the living Indians. Sculptured animal forms were used to decorate utilitarian objects, the shape of which was sometimes entirely subordinated to the decorative animal design. Some of the realistic art is cruder than that seen to the north, and perhaps more closely resembles that of the Lillooet Valley near by to the east, and perhaps also that of the region between Lower Fraser River and as far south as the Dalles. It resembles that of the old carvings found in the interior.

The graves were covered with cairns, mounds, and shell-heaps. The skeletons are found flexed on the side, and, unlike the skeletons found in the interior, they have no accompanying artifacts. Stone cairns are found on southeastern Vancouver Island in British Columbia; on the San Juan group, and on Whidbey Island, in Washington. This method of burial is known to have antedated contact with the whites by a considerable period. None of the present Indians build cairns, or know any people who have done so. The stone structures are usually located on slopes with a gravelly soil, which are

strewn with angular bowlders, and near the sea. So far as we know, they are always within a mile of shell-heaps.

In general, the cairns consist of irregular piles of bowlders, from three to twenty feet in diameter. One cairn is found over each body, which in some cases is surrounded by a more or less rectangular cyst, formed by placing the straight sides of several bowlders towards it, and covering the opening thus formed with one, two, or more slab-shaped rocks of like character. In some cases there are slab-like stones over the grave; but the vault is not well formed, if present at all; and in other cases the cover-stones are so small that they do not form a protecting roof over the body. Over the cyst the rough pile of the cairn was reared. It is frequently bounded by a single row of large stones; while the filling between this wall and the vault is of small fragments, bowlders, and in some cases largely of soil or mixtures of these materials. Rectangular cairns have been found where the outer row had been carried up so as to form a retaining-wall, making the whole structure similar to a truncated pyramid. Cairns were also found in which the body was placed at the side of a large bowlder and covered with small bowlders piled up against the large rock. The skeleton, which is found on the side in the usual flexed position, is found on the original surface of the soil, sunken into it, or in a shallow hole dug down into the surface soil, or in some cases even into the gravel below. It is often much decayed, especially in the cairns near Victoria, where complete skulls are rarely obtained. In forty-two cairns excavated there, no entire bones were secured. At North Saanich and near Coupeville, however, complete skeletons have been collected. The skeletons are sometimes burned, but the evidences of fire in the cairns do not seem sufficient to conclude that the bodies were burned in the vaults. The skulls show a variety of types and deformations, both post and ante mortem.

The cairns are perhaps most highly developed in the vicinity of Victoria, which is near the centre of their distribution, so far as known. The slight variations in the different localities seem likely to be due to carelessness or lack of good materials rather than to a difference in culture. The cairns are always near coast shell-heaps, in all of which few skeletons are found, and those found are often in disorder. Cairns are not found near shell-heaps containing numerous skeletons. Possibly the cairns are the burials of some of the people who made these shell-heaps.

The burial-mounds of the region, and the cairns, present similarities of structure, and one may be derived from the other. On the other hand, some cairns seem to have degenerated until they are no more than a stone-heap over a grave.

Skeletons are rarely found in the shell-heaps, except in those of the deltas of the Fraser, Stillaguamish, and Skagit Rivers, and there cairns are not found. In the Fraser Delta they were usually found in the rear portion

of the shell-heap. Here they were deposited at the time of the layers, and were not intrusive burials, as was clearly shown by the numerous unbroken strata extending over them. Two distinct types of man are represented by these bones. They were apparently co-existent, as the bones are found in the same layers. If one of the types consisted of captives or slaves, there was nothing in the manner of burial to indicate it. Where cairns are not found, the scarcity of human remains in the shell-heaps of the seacoast may be accounted for on the supposition that tree-burial, where the bodies fall and are soon destroyed or the bones scattered, was as extensively employed in former times as at present.

In the southern part of the area here under discussion, skeletons are rarely found in the shell-heaps, and cairns have not been discovered south of Camano Island. In the region to the north of this area, more particularly on the northern part of Vancouver Island, human skeletons are not found in the shell-heaps, and no cairns seem to occur.

The shell-heaps of the Lower Fraser River appear to have certain peculiarities of their own, and vary in detail not only from most of the shell-heaps of the coast region, but also from those of the delta areas of the Stillaguamish and Skagit Rivers. The objects secured from the former are more numerous and of a higher artistic value than those found in the coast shell-heaps, or even in those of the other deltas. Human skeletons are frequently found in the shell-heaps of the Lower Fraser, occasionally in those of the Skagit and Stillaguamish Deltas, rarely in the shell-heaps of the Saanich Peninsula, and very rarely, if at all, in other coast shell-heaps. As before stated, burial in cairns was not practised in the immediate vicinity of such of the shell-heaps as contained numerous human skeletons.

On the whole, the difference in character between the delta shell-heaps and those of the coast seems to be due to the blackness of the surrounding soil, poor drainage, and the dissimilarity between the mode of life of a delta and that of a seacoast people. The more frequent occurrence of skeletons is an unsolved problem.

The difference between the various delta shell-heaps seems to suggest that the culture of the inhabitants of the Lower Fraser River was more highly developed than that of the inhabitants of other parts of the coast, probably on account of a more favorable environment and a location where intercourse between tribes of different cultures was greater than in the neighboring deltas.

There is no apparent difference in the character of the specimens found in the upper and in the lower layers of any of the shell-heaps, although it will be remembered[1] that skeletons with the narrow type of skull were found at North Saanich only in the deeper layers. The general style of the objects

[1] See p. 354.

is similar to that of those made by the present tribes of the coast; and some of the carvings are equal to the best sculptures of the existing natives.[1]

Some local peculiarities of culture may be noticed. Among the natives of the coast of British Columbia, the art of chipping stone was not practised. Isolated specimens of chipped points are found all along the coast; but they are frequent only on the Fraser River and at Saanich, where many of them resemble, in both shape and material, those of the Thompson River region. The chipped points of Puget Sound and of the west coast of Washington are, on the whole, more like the chipped points of Columbia River.

It is said that celts were formerly hafted in fore-hafts made of antler in the Thompson River region. Such specimens have been found in the Lillooet Valley and in the shell-heaps of the Fraser Delta, of Comox of the Saanich Peninsula and Victoria, and of the Stillaguamish Delta. I am not aware of any specimen found north of Comox until we reach the Yukon Valley in Alaska, nor of any found in the United States south of Utsalady, near the Stillaguamish Delta. In the region under discussion they are numerous, so far as we know at present, only in the heaps of the Fraser Delta, the region of the Saanich Peninsula to Victoria, and the Stillaguamish Delta. This same type of hafting, which was so common in prehistoric times in northern Europe, occurs also all along the Arctic coast of America.

Tubular pipes similar to those of the interior are found on the coast only in the Fraser Delta and near North Saanich on Vancouver Island. Skulls which closely resemble the narrow type found at Eburne have also been found in the lower layers of the shell-heaps at North Saanich, and there only. Artifacts seem to be most plentiful in proportion to the bulk of the shell-heaps on the Lower Fraser, at Saanich, and at Comox.

At Comox, besides the specimen shown in Fig. 106, two objects which may be pitted hammer-stones were found; but none were seen on the Saanich Peninsula, although one has been obtained at Esquimalt. Such pitted hammer-stones, as previously mentioned on p. 312, are not found in the interior of British Columbia and Washington, but on rare occasions are met with from the region here under consideration.

A fragment only, of a typical wedge made of antler, was seen in the vicinity of Comox, and such wedges are scarce north of there. The apparent absence of a large number of wedges at this place may be accounted for on the supposition that most of them were made of wood, like the more common form of wedge used by the modern natives. The wooden ones having decayed, a comparatively small number of wedges made of antler were left. On the other hand, many antler and a few bone wedges were found on the Saanich Peninsula in the Fraser Delta and in the Thompson River region; but in this latter area they are more numerous than on the coast. Those made of

[1] See Figs. 52 (p. 183), 58 and 59 (p. 187), of this volume.

antler occur frequently as far south as the delta of the Stillaguamish, and less frequently even as far as Burton. Wood is not so extensively used in the Thompson River area.

At North Saanich and in the Thompson River region the objects decorated with geometric designs seem to have only such designs, and those sculptured only carving in the round. In other words, the geometric designs and the sculpture were kept apart. In the Lower Fraser Valley, objects were found bearing both geometric designs and sculpture.[1] However, this impression may be removed when more examples of the art of these regions become available for study, and we may find that this art and that of the Lower Fraser Valley are practically the same. The style of sculpture of this whole area, with the exception of the Fraser Delta, is much cruder than that of the more recent art of the North Pacific coast proper. The type of archæological specimens from this area seems to resemble somewhat the art of the present Indians of Lillooet, and perhaps also, more generally speaking, that of the region between Lillooet and the Upper Columbia River, even more than do the sculptures found in the Fraser Delta and described on pp. 183 et seq. of this volume. The seated human figures with bowls in the lap, carved from steatite, resemble somewhat the sculpture from Kamloops shown in Fig. 380 of Vol. I (p. 431), and one from Lytton shown in Fig. 185, *a*, of this volume.

Incised geometric designs in the form of bands, on two harpoon-points from the shell-heaps of the Lower Fraser, are illustrated in Fig. 50 (p. 182) of this volume. Similar forms, but of a more pictographic nature, and associated with incised pictographic designs, were found at Lytton.[2] Incised bands with cross-hachure occur also on a costumed human figure carved in antler from Tampico in the interior of Washington.[3] Incised geometric designs like those on the specimens from the Fraser Delta are found also at North Saanich.[4]

All this points to a close affiliation of the early culture of the Saanich and Fraser Delta region with that of the interior of British Columbia. Some classes of objects that are frequent in the archæological finds of the interior do not occur in the shell-mounds of Fraser River. No drills chipped from stone were found, unless some of the narrower specimens considered as arrow-points served that purpose. Some of the more irregular chipped points may have been used as carving-knives, but no other such knives were seen. Pairs of half-cylinders of sandstone for smoothing and straightening arrow-shafts were not found. These are not necessary where cedar, which splits so straight, occurs, and may be used for arrow-shafts. Beaver-teeth or woodchuck-teeth made into dice, which are now used both in the interior and on the coast, were not found. No objects were found buried with skeletons, as is the case

[1] Cf. Figs. 53 *a* (p. 184) and 59 (p. 187) of this volume.

[2] Vol. I, Figs. 21 (p. 137), 110 (p. 156), 111 and 112 (p. 157).

[3] Bulletin American Museum of Natural History, 1904, Vol. XX, Fig. 1, (p. 197).

[4] See Fig. 141, *a*.

in the Thompson River region and in modern burials in the Fraser River Delta. The coincidence of the similarity of culture of the prehistoric people of the Fraser Delta and of Saanich with the distribution of languages at the present time is quite striking. The Salish languages reach the coast of the Gulf of Georgia, and extend southward as far as Shoalwater Bay. Their dialects are distributed in such a way that in the same latitude the same dialect is spoken east and west of the Gulf. Vancouver Island and the parts of the mainland just opposite must therefore have had a common history, and this is also borne out by the archæological finds at Saanich and on the Lower Fraser River.

The use of points rubbed out of stone and bone, of fish-knives rubbed out of slate, of harpoon-points made of bone, of dice like those made of beaver-teeth, and of the style of carvings in bone, especially those shown in Figs. 171, *d*, *e*, — all found in the southern interior of British Columbia, — suggests that at this early time the people of the interior were influenced by the Coast tribes. The occurence of bone of the whale, dentalium and olivella shells, and of pendants made of the shell of *Pecten caurinus* and of abelone from the Pacific coast, proves the existence of intertribal trade in that direction.

It would seem, therefore, that we have here very good evidence of a close connection between the interior and the coast in prehistoric times. It is probable that at an early time a migration took place from the interior to the coast and to Vancouver Island. This migration carried the art of stone chipping, the use of tubular pipes, and geometric decorative art, to the coast, and in later times the custom of depositing artifacts with the dead.

The leaf-shaped point chipped out of mottled-brown chert, purchased at Penn Cove,[1] resembles the chipped points found east of the Cascade Range, — for instance, at Ellensburg and Priests Rapids, — especially in the appearance of the material out of which it is made; and it suggests that the material for at least some of the chipped implements found in the region from Eburne to the mouth of the Columbia was brought either over the Cascade Mountains or down the Columbia and north in the coast region.

Points made of obsidian have been obtained from Penn Cove, at North Saanich, and at Port Hammond.[2] Chipped obsidian points were also found by us in the Yakima Valley, and Mr. Teit has seen a few among archæological finds in the Thompson River region.

Bone awls with handles, both being made of two hollow bird-bones, — one small and slender, set in another wider one (a wing-bone with both ends broken off irregularly), — are frequently found in the shell-heaps at Dungeness and Port Williams, but were not seen near Comox, Saanich, Victoria, or in the Fraser Delta.

The distribution of clubs made of bone of whale in the Columbia and

[1] See Fig. 158, p. 379.

[2] See pp. 142 and 143 of this volume.

Thompson valleys, and the resemblance of the type of carving found on other objects in the latter region to the carving on some of the clubs, suggest that part of the results of coast influence may have reached the interior through the Columbia Valley or the mountain-passes immediately north of it, rather than by the more northerly Chilcotin route[1] and the Fraser Valley.

Professor Boas has called my attention also to the evidence of modern intercourse, which must have extended over long periods, extending north and south in the Cascade Range. He says that this point is brought out clearly in the distribution of imbricated basketry. The technique of the Klickitat region is the same as that of the Lillooet, while the designs show clearly the influence of California patterns. This Klickitat basketry has found its way quite frequently to the east coast of Puget Sound. The same is true of the Lillooet basketry, which is found not at all infrequently in the region from Comox to Victoria.

It should be mentioned in this connection that the most highly developed type of Northwest coast art never extended south of Comox, and never reached the west coast of Vancouver Island. Although more realistic than the decorative art of the interior, the modern art of the region south of Comox and along the west coast of Vancouver Island is crude, as compared with that of the more northern regions.

In regard to this point Professor Boas says that recent collections from the west coast of Vancouver Island give clear evidence that the typical North Pacific coast art is of recent importation into that area. Even now, the types of masks, paintings, and carvings differ from those farther north in being more angular in outline, and in having in a less-developed degree the characteristic conventionalism of the North Pacific coast, consisting in wide application of surface decoration with "eye" patterns, and in dissection of animal forms. Specimens in old ceremonial houses, which undoubtedly go back to the early part of the nineteenth century, are identical in type with carvings from the west coast of the State of Washington, particularly a number of carved figures and of shamans' batons, which are exactly the same in type as those recently collected among the Quinault and Chehalish of Shoalwater Bay. The same fact is brought out by a few basketry hats collected by New England whalers, one of which is now in the American Museum of Natural History, while a few are in the Peabody Museum;[2] still others, are in the British Museum. All these show angular realistic designs, found only on the basketry of the west coast of Washington, and, to a less extent, on that of Columbia River.

A few specimens point to similarities between the prehistoric people of the Fraser Delta and those of the north. The most striking is the occurrence

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[1] See Vol. I, p. 134.

[2] Charles C. Willoughby, Hats from the Nootka Sound Region (American Naturalist, 1903, Vol. XXXVII, pp. 65-68).

of the labret, which in historic times has not been found south of Milbank Sound.

The migration referred to before may account for certain changes in customs, such as the modification of the method of burial on the southeastern part of Vancouver Island. The earliest known kind of burial, and the one that is known to have antedated contact with the whites by a considerable period, was in stone cairns. Later, and even since contact with the whites, the bodies were placed in wooden chests, which were deposited on the ground, in the branches of trees, in caves, or on little islands. A canoe was sometimes used instead of a box.

The fact that skeletons were found in shell-heaps indicates that the customs of this people must have differed from those of the people who made the shell-heaps on northern Vancouver Island, in which skeletons have not been found.

This coast culture apparently influenced that of the Lillooet, and probably was communicated by them to the interior, while elements of the culture of the interior probably were carried to the coast by way of the Lillooet Valley.

We may sum up the results of our inquiries by saying that the culture of the ancient people of the Puget Sound area was in all essential particulars similar to that of the tribes at present inhabiting the same area, but that it was under a much stronger influence from the interior, and affected the culture of the interior both of southern British Columbia and of Washington more in the past than at the present time. It seems that this culture has continued practically unchanged during recent times.

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