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THE WASHINGTON ARCHAEOLOGIST

WASHINGTON ARCHAEOLOGICAL SOCIETY, WASHINGTON STATE MUSEUM, SEATTLE 5, WN.

NEXT MEETING: Seattle Chapter - September 13, 1961 - 8:00 P.M.

MEETING PLACE: Washington State Museum
4037 15th Avenue N. E.
Seattle 5, Washington

PROGRAM: Del Nordquist will review and summarize work done by the Society during the summer and slides taken by some of the members will be shown.

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FIRST FALL DIG - Saturday and Sunday, September 16 & 17

Present plans call for digging at the Skagit site. Details will be discussed at the meeting on September 13th. Individuals interested in the dig but unable to attend the meeting may call Del Nordquist, CH 2-5602, for details.

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OCTOBER MEETING

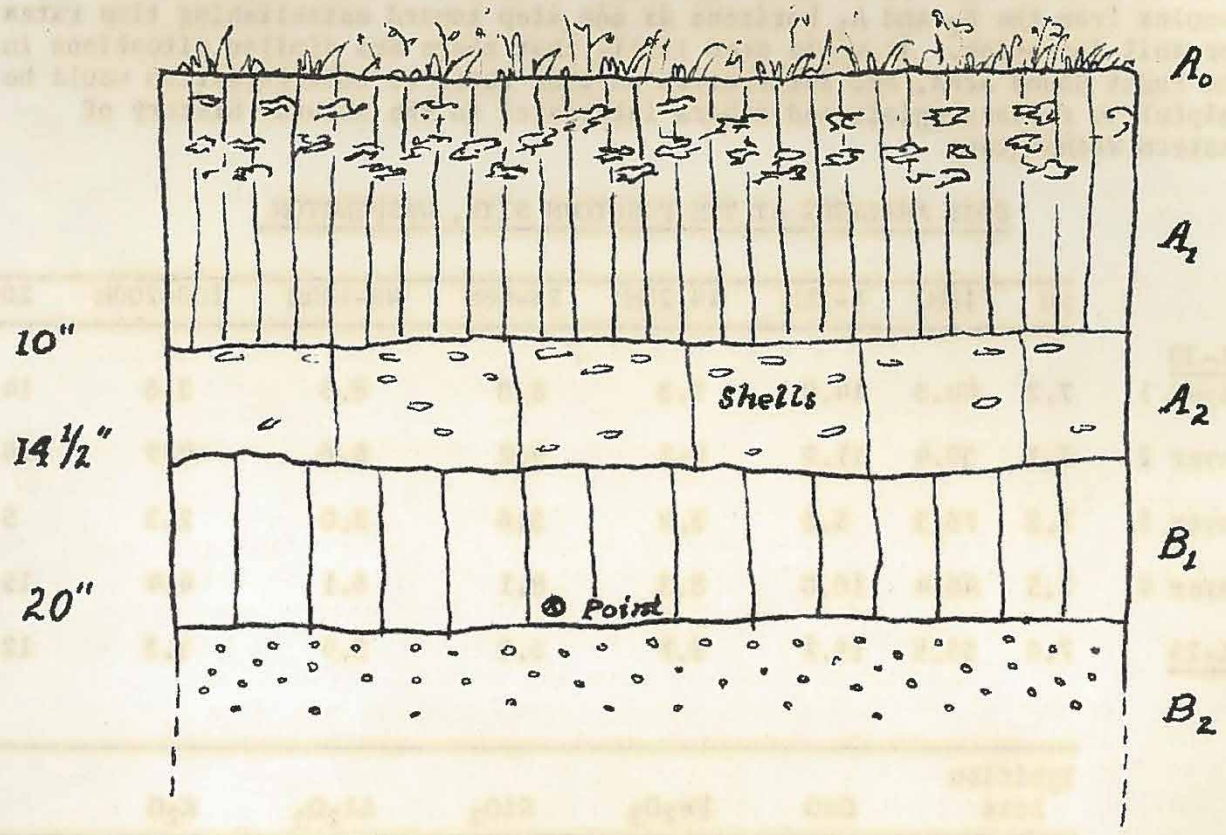
ELECTION OF 1962 OFFICERS

SOIL PROFILE AT THE FISHTOWN SITE, WASHINGTON

by Earl H. Swanson, Jr.

In August, 1959, I made a one-day visit to the Fishtown Site situated on a small knoll at the mouth of the Skagit River in western Washington. The site was being excavated by the Washington Archaeological Society, and assistance was requested for an evaluation of the sediments and soil profile visible at that time. The site consists principally of a series of depressions situated on a small tree-covered knob of dunite rising above the delta of the Skagit River. The depressions appear to represent either house pits or deep cooking areas. Quantities of shell are found in and around the depressions, each of which contains a hearth. The significance of the site lies not only in the features but in the presence of a Cascade point beneath the midden deposits associated with the houses. Points of this type were manufactured over a long span of time beginning apparently quite early in the Puget Sound region (Butler, 1961). The purpose of the study was to see if any geological estimate could be made for the antiquity of the occupations and if any appraisal could be made of past climates which might be indicated by the character of the deposits.

Field observations and laboratory analyses indicate that no major climatic changes have occurred during the time in which the soil profile developed. The soil is a mature humus podsol developed on a base-rich parent material (dunite) with an alkaline pH and a soil type normally characterized as acid (see Table 1). The soil is presently developing under several kinds of vegetation such as Douglas Fir, White Fire, Yew, Snowdrop, Salmonberry, Vine Maple, and Oregon Grape. The profile at the site may be summarized as follows: A surface layer of raw humus grading into moder humus constituting an A_0 and A_1 horizon (Soil Sample No. 1); beneath this is a bleached light grey zone constituting both the midden deposit and the A_2 horizon of the soil profile (Soil Sample No. 2). Beneath the midden deposit is another humus horizon, dark in color and constituting at the present time the B_h or B_1 horizon (Soil Sample No. 4). The house depressions were cut down to bed rock from what is now the surface of the B_h horizon, and the Cascade point occurs at the base of this zone. Next, is the reddish B_s or B_2 horizon (Soil Sample No. 3). The bedrock and the weathered parent material (CL-23, Soil Sample No. 1) constitute the C horizon on the profile. The changes in particle size of the sediments are minor and suggest only a gradual and relatively steady weathering of the dunite. Accumulation of the sediments is probably the consequence both of weathering and of slow mechanical transport on the slopes of the knoll. There appears to be no evidence for rapid deposition of sediments which might be caused by a period of greater aridity and consequent denudation. The development of the soil profile appears to have been more or less continuous and was interrupted only by the interval of house construction and midden accumulation. In the house depressions the soil profile is immature and does not show the clear development of B_1 and B_2 horizons which are otherwise found on the knoll. The period of occupation in the houses at the site does not appear either to have been very long or a very long time ago. The fir trees covering the hill appear to have a maximum estimated age of 150-200 years. The houses and associated midden beneath the forest cannot be historic in age but probably



TYPICAL SOIL PROFILE
IN VICINITY OF CL-30
45SK33 FISH TOWN SITE

do not have any great time depth. The Cascade point, on the other hand, underlies the B_1 horizon and was, therefore, deposited at a time when the soil was just beginning its development. It may be associated with the beginning of the climatic interval which made possible the development of the profile. Unfortunately, there is no established time rate for soil processes. It may be assumed that the climate has been more or less the same over a sufficient period of time that this kind of soil could be formed. There might also have been periods of temperature and rainfall change or of distribution of rainfall which might either have slowed or accelerated soil growth. A profile of this maturity probably did not develop in a short time and it can only be suggested that the deposits and weathering profile represent some portion, and perhaps all, of the Medithermal Period. Thus, the Cascade point could be as much as 2000 or more years old. It would be useful to have radio-carbon samples from the B_2 and A_1 horizons as one step toward establishing time rates for soil formation. It would seem likely that there are similar situations in the Puget Sound area, and information on time rates or soil formation would be helpful to archaeologists and others interested in the natural history of western Washington.

SOIL ANALYSES AT THE FISHTOWN SITE, WASHINGTON

	pH	+8M	8-14M	14-28M	28-48M	48-100M	100-200M	200M
CL-30								
Layer 1	7.2	44.5	14.0	9.3	8.0	6.3	3.6	14.3
Layer 2	7.1	39.4	11.9	9.1	9.2	6.6	4.9	18.9
Layer 3	7.2	76.3	5.2	3.9	3.6	3.0	2.3	5.7
Layer 4	7.5	46.4	10.8	8.3	8.1	6.1	4.4	15.9
CL-23	7.6	56.5	11.7	5.7	6.1	3.9	3.3	12.7

	Ignition Loss	CaO	Fe_2O_3	SiO_3	Al_2O_3	K_2O
CL-30						
Layer 1	24.8					
Layer 2	16.6	15.3	4.4	41.1	8.1	1.5
Layer 3	5.9	.5	6.8	58.7	11.4	1.8
Layer 4	11.7	9.9	5.4	49.6	9.5	1.5
CL-23	5.9	.9	7.1	60.3	.4	1.7

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REPORT ON PROGRESS AT 45SN100

Throughout part of July and the month of August, members of WAS have been active again in the Snoqualmie drowned site. It had been hoped that further evidence of a fishing station would be consummated since work last year had been so proscribed by a late discovery of the site and the early rise of the river which ended all excavation. To date, sufficient new evidence has been taken from the dig to give positive proof of the aboriginal importance of the area as a fishing spot, particularly of salmon which has been revealed by occasional vertebrae and the discovery of a portion of weir which, according to most ethnographic sources, was used primarily for taking salmon.

The "net" weights have had further corroboration; also, a large weight or anchor was found by Kay Nelson. The latter lay with its upper edge exposed under the log that had extended, intrusively, into the excavation area. Members Clifford Imsland, Ted Weld, et al set aside the log revealing the anchor which was no more than a large boulder with partial bindings on the underside and which had once been part of a complete lashing to some line. The stone was carefully removed and inverted so the line and its knot could be preserved intact.

Only one wooden hook has been found at the time of this report. Other wooden items including a number of chips, some revealing the native technique of adzing and splitting for examples have been found still joined as well as in single incidence. The number of rods and poles, so numerous and usually found in a jumbled way, continue to be found in the upper level. It was in this strata that the entwined fragment of weir was discovered by Willi Weld. (See illustration). Occasional spatulate, slightly pointed, shaped and fire hardened pieces of wood were found. All were broken so that positive identification is difficult. It is the writer's contention that these may represent wooden points and it is hoped that more conclusive evidence will eventually be found. Barnett illustrates one such point in his study of the Coast Salish of British Columbia (figure 37, page 102).

Basketry still continues to be the most obvious type of artifact recovered. There have been new twined specimens found which are at slight variance with those previously reported. The incidence of the large open-work twined basket seemed likely, but was not conclusive until this season's evidence. Lattice constructions have been added to the twined techniques. One additional small, twined "berry basket" has been recently excavated almost whole. The largest percentage of basketry still follows the trend already set being the plaited splint utilitarian baskets reported in the WASHINGTON ARCHAEOLOGIST. Cordage and knots continue to be found. The fiber rings and coils also appear with some frequency. Soft braided cedar rope fragments have been removed, with sections of the heavier and sturdier split-withe ropes in considerable quantity and length. The withe rope industry seems to have been localized and done at the site since the incidence of partially split pieces continue to occur. Much of the cordage and even basketry found in the site seems of a type and material that could be locally procured and made in the immediate area.

Stone work has been similar to those already found, i.e. projectile points, drills, burins and/or knives, and scrapers. The points follow the types reported as wide flaring tangs, with a continued peculiarity of tending to asymmetrical notching. The number of drills, or tapered chipped points suitable for awl-like use have been substantially increased. A number of worked pieces terminating in a point or edge--hence called here burin or knife--reveal a localized wood-working industry which substantiates the opinion that the aboriginal inhabitants did much of their construction and maintenance of the fishing weir, etc, on the site. Scrapers continue to be typified by the small trapezoidal, single-edged type and the large crude cobble type. One celt fragment was found. Several whet-stones have been added.

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A FISH WEIR FRAGMENT FROM 45SN100

by Del Nordquist

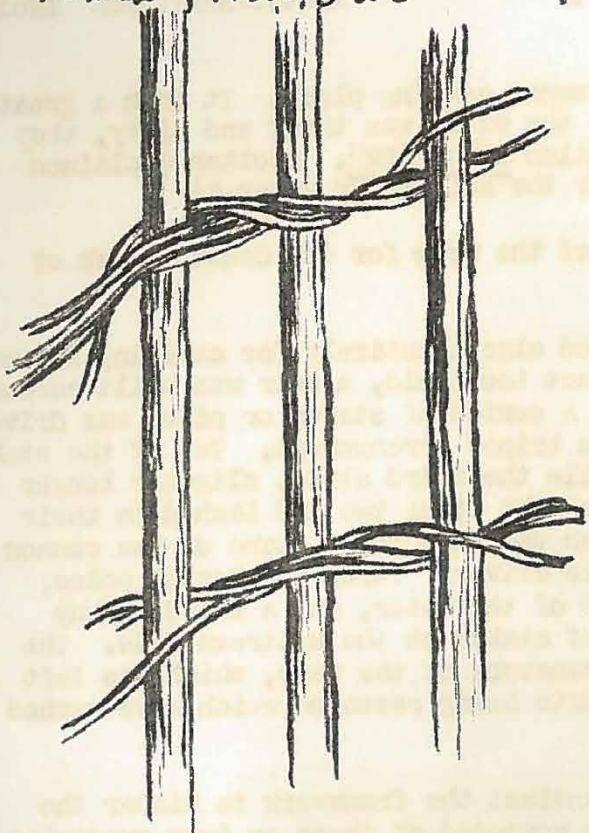
The discovery of a fragment of weir in situ makes a suitable excuse for giving some ethnic data reported on weirs. Members of WAS are to be alerted to the importance of excavating so that the likelihood of further intact or associated fragments may be found. It is of utmost importance that the relation of knots and poles, of weights and lines, of lines and hooks be carefully recorded and observed. Only associational data can give answers to the many questions of use and relation of the materials retreived from the site.

Weirs are a known fishing technique along the whole of the Northwest Coast. They are reported from Alaska to California and although more frequently used on the west side of the Cascades and the Sierras are also reported for the interior. The Salish use of the weir is described by many ethnographers but only two will be mentioned here.

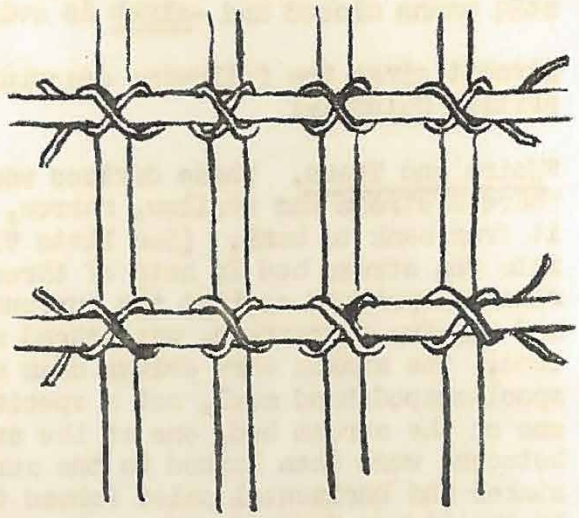
The most significant reference is that in Haeberlin and Gunther for it describes an actual Snoqualmie weir.

"Salmon fishing was done by means of nets, traps, or weirs, fishing with hook and line or trailing a net. Salmon were also speared like seal and sturgeon.

"A salmon weir described by Snuqualmie Jim was used as follows: Several sets of alder wood poles (Figure II), were set up in tripod fashion across a river or creek where the water was quite shallow. The whole stream was fenced off with willow staves about 8 feet long and one to two inches thick, stuck side by side in the river bed and lashed together with string. The row of willow sticks was fastened to the tripods, which were held together by a long pole. The water came about to half the height of the willow sticks. Each tripod had a platform above the water which was about 6 feet square. The fisherman stood on this, holding a long pole with a dip net about 4 or 5 feet long at the end. In coming up the river the salmon were held back by the fence and the water at the trap would be full of fish. The men on the platforms took the salmon out of the water with their dip nets and clubbed them to death.

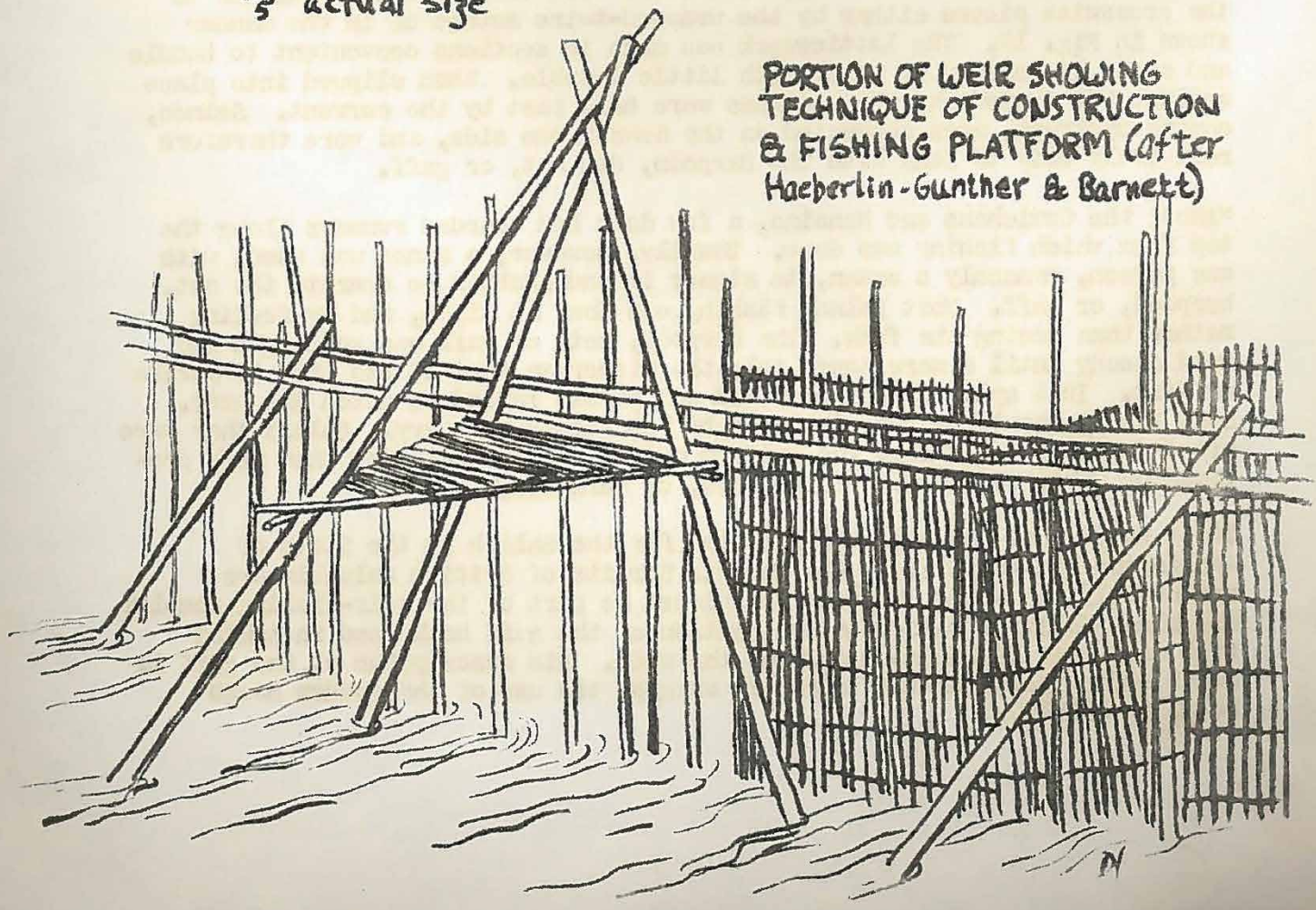


459N100 WEIR FRAGMENT
$\frac{1}{5}$ actual size



DETAIL OF WEIR CONSTRUCTION.
(after Barnett)

PORTION OF WEIR SHOWING TECHNIQUE OF CONSTRUCTION & FISHING PLATFORM (after Haeberlin-Gunther & Barnett)



"The Indians had such weirs near their summer camping place. It took a great deal of labor to construct them. Unless the water was thick and dirty, they got salmon at night. Such a weir was called stEqa'lEk^{u}. Shelton explained stEq means closed and -alEk^{u} is evidently the suffix for water."[1]

Barnett gives the following description of the weir for the Coast Salish of British Columbia:

"Weirs and Traps. These devices were used almost entirely for catching salmon. Where a stream was shallow, narrow, and not too rapid, a weir was built across it from bank to bank. (See Plate VII.) A series of stakes or piles was driven into the stream bed in sets of three in a tripod arrangement. Two of the stakes slanted upstream against the current, while the third stake, slightly longer and sloping downstream, was braced against the other two and lashed to their tops. The stakes were driven down with an unworked river stone or the common spool-shaped hand maul, not a special pile driver. Three horizontal poles, one on the stream bed, one at the surface of the water, and a third midway between, were then lashed to the series of stakes on the upstream side. The stakes and horizontal poles formed the framework of the weir, which was left in the stream from year to year, those parts being restored which were washed away in floods.

"Sections of latticework were then laid against the framework to hinder the passage of salmon. This lattice work was composed of three or four crosswise pieces to which were bound, a few inches apart, upright cedar laths which reached to the high-water mark. The laths were tied with cedar withes to the crosswise pieces either by the wrapped-twine method or in the manner shown in Fig. 19. The latticework was made in sections convenient to handle and could be removed or reset with little trouble. When slipped into place against the framework, the sections were held fast by the current. Salmon, coming upstream, were congested on the downstream side, and were therefore relatively easy to land with the harpoon, dip net, or gaff.

"Among the Cowichans and Nanaimo, a few dams had boarded runways along the top from which fishing was done. Usually, however, a canoe was used, with one person, commonly a woman, to steady it and another to operate the net, harpoon, or gaff. Most salmon fishing was done at night, and by feeling rather than seeing the fish. The harpoon, net, or gaff was submerged and held steady until a mere touch told the fisherman that it was time to strike or jerk. In a split second he acted and rarely failed to catch his prey. Some fishing could be done in daylight but salmon are wary. Unless they were crowded against the weir, the optimum conditions for catching them were provided by murky water, dark rainy days, or darkness."[2]

It is noted that the weirs as reported for the Salish in the State of Washington and those along the Georgia Straits of British Columbia are essentially the same. Fishing techniques as part of the weir-fishing complex are also similar. Barnett makes mention of the gaff hook used in taking fish once they are crowded against the weir. His description of the gaff is worth adding here for they strongly suggest the use of the wooden hooks found in 45SN100.

"The shaft of the salmon gaff fitted into a socket in the hook and a line led to the detachable hook (see Fig. 23). Like the harpoon and the leister, the gaff was operated from canoes, from platforms close to shore, in eddies, or at rapids. It was held under water until touched by a fish; then it was jerked upward, the hook came off, and the fisherman held to the line. There is some doubt whether this hook, or any like it, was made aboriginally. Some informants (Tswasan, Slaiaman, and Nanaimo) disclaimed it as an Indian invention. The point of the aboriginal hook was described as a steamed and fire-hardened wooden crook, or a long bone barb fastened on at an acute angle much like the straight shanked trolling hook.[3]"

The accompanying plate gives details of the weir as found in the recent excavation, and a reconstruction based on the illustration in Haeberlin and Gunther, plate VII in Barnett, and an excellent photograph of a weir at Cowichan River from the British Columbia Heritage Series, Our Native Peoples: Coast Salish.[4]

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1. P. 27, Haeberlin, Hermann and Erna Gunther: The Indians of Puget Sound, University of Washington Press, Seattle, 1930.

2. Pp. 79-80, Barnett, Homer G. The Coast Salish of British Columbia. University of Oregon Press, Eugene, 1955.

3. P. 84 ibid.

4. P. 19 British Columbia Heritage Series, Series 1, Volume 2, Coast Salish. Provincial Archives, Victoria.

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