VOL. V, No. 3 MARCH 1961

THE WASHINGTON ARCHAEOLOGIST

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

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

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

SPEAKER: Mr. Bob Kidd will discuss "Archaeological Investigation on Sucia, Summer of 1960."

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Mr. John Osmundson, speaker at the February meeting, is preparing a summary of his remarks for publication in the April issue of the Washington Archaeologist.

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The Seattle Chapter Smorgasbord of Sunday, February 17th, was a great success thanks to the hard work of the Social Chairman, Mrs. Ted Weld. The Weld home was overflowing with delicious food, sociability and WAS members and friends. Our thanks to the Weld family for playing host to this great affair.

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Two WAS members have been busy speaking to various groups and organizations in the Seattle area during the past few weeks. Dave Rice has spoken to four or five classes at Garfield High School and C. G. Nelson has been guest speaker at the Seattle Gem Collectors Club and at a Cub Scout dinner.

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ANTIQUITIES LEGISLATION

As stated in the December, 1960, issue of The Washington Archaeologist, the complete text of the antiquities legislation presented to the Thirty-Seventh Legislature, 1961-1963, State of Washington, is being reprinted in this issue. Nat Washington, Ephrata, and Al Henry, White Salmon, jointly sponsored the legislation which was recorded as Senate Bill 348, February 2, 1961. S.B. 348 was referred to the Natural Resources Committee. This committee forwarded the bill and its affirmative recommendation to the Rules Committee. It is expected that the Rules Committee will place it on the Senate calendar in the near future.

The bill in its present form represents a composite of the individual proposals of the University of Washington, the Washington Archaeological Society and the counsel of Senator Washington and the legal staff serving the legislature. During this period Washington State University was advised and consulted in order that the final product would be acceptable to all those immediately concerned with the legislation.

S.B. 348

AN ACT Relating to conservation of archaeological and historical resources in the state of Washington; establishing a board; defining duties and powers; providing penalties; and repealing section 2, chapter 216, Laws of 1941 and RCW 27.44.020.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

Section 1. Definitions:

(1) "Historic" means after the advent of the European in the present limits of the state of Washington.

(2) "Historic site" means a site, landmark or monument of historical significance pertaining to the history of Washington, or Indian campgrounds, shelters, petroglyphs, pictographs, burials or other historic remains.

(3) "Prehistoric" means an archaeological site, ruin, deposit, object, petroglyph and pictograph, habitation cave, rock shelter, burial or other prehistoric remain.

Section 2. The Governor shall establish a board for the administration of this act, to be known as the Washington archaeological board. This board shall consist of five members to be appointed as follows:

(1) One member, appointed by the president of the University of Washington;

(2) One member, appointed by the president of Washington State University;

(3) One state parks and recreation commissioner appointed by the governor;

(4) One member, appointed by the governor, selected from the board of directors of the Washington Archaeological society;

(5) One member at large, appointed by the governor.

Section 3. The appointed state parks and recreation commissioner shall serve on the board as long as he shall hold his office. The remaining members shall serve on the board for terms of four years. Vacancies occurring for any reason other than expiration of their term, shall be filled as provided in section 2 for the unexpired term.

Section 4. The Washington archaeological board shall be charged by the governor with conducting an archaeological survey of the state of Washington which shall have the function of:

(1) Sponsoring, and directing fundamental research into the archaeology of this State and encouraging and coordinating archaeological research and investigation undertaken by groups and individuals within the state of Washington.
(2) Receiving and disbursing funds appropriated by the legislature for archaeological research within the state.
(3) Formulating rules and regulations for the discovery, conservation and interpretation of archaeological remains within the state. The rules and regulations shall be made public when promulgated and published in code form.
(4) Issuing and voiding of permits for archaeological work on lands within the jurisdiction of the state.

Section 5. Nothing contained in this act shall be construed to limit or prohibit any person owning land in this state from investigating, exploring or excavating a prehistoric or historic site on his own land. Pursuant to its stated purposes, the board shall encourage the preservation of prehistoric and historic sites on privately owned lands by advising the owners of the scientific importance of their holdings and the desirability of applying the spirit and policy of this act.

Section 6. No person shall investigate, explore or excavate a prehistoric site on state owned or controlled lands or remove any object therefrom unless he is the holder of a valid and current permit issued pursuant to the provisions of this act.

Section 7. Nothing in this act shall be construed to limit or prohibit any person from collecting arrowheads or other Indian artifacts as long as they are not a part of a prehistoric site. Materials only when they are removed or relocated from their original location in a site by river wash, wave action or other natural causes may be considered as not being part of a prehistoric site. Materials in a site under water which are still in situ are protected by the provisions of this act.

Section 8. Any person violating any of the provisions of this act shall be guilty of a gross misdemeanor, and upon conviction thereof shall be punished by a fine of not more than five hundred dollars, or by imprisonment in the county jail for not more than thirty days, or by both fine and imprisonment.

Section 9. The governor shall request a biennial appropriation from the legislature to enable the Washington archaeological board to carry out its functions as specified in section 4.

Section 10. Members of the Washington archaeological board established

under section 2 shall serve without remuneration, but each member shall be paid his proper traveling and other expenses incurred in the work of the board from funds appropriated under the provisions of section 9.

Section 11. Section 2, chapter 216, Laws of 1941 and RCW 27.44.020 are each repealed.

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PRELIMINARY ARCHAEOLOGICAL SURVEY OF THE PILCHUCK RIVER

and

SOUTH FORK OF THE STILLAGUAMISH RIVER

Jack Thomson

In 1959 Leo Olcott brought a portion of the artifacts he had collected from the fields on his farm to the Washington State Museum for any possible information they could supply. These were subsequently loaned to the University for study. Dr. Greengo presented a paper "A Recently Discovered Artifact Complex in Western Washington" to the annual meeting of the Society for American Archaeology on May 6, 1960, which was a discussion of the artifacts from the Olcott Site. Since this time the author has been making an intensive survey of the area. Residents in the area known to have made collections have been contacted, the collections photographed and measured, information secured as to their origin, and these localities checked in the field. Other members of the Society who are working with the author on this survey are Ted Weld, B. Robert Butler, Howard Myrick, Robert Crabtree, Dick Gent and C. G. Nelson. The acknowledgements would not be complete without mention of many persons who have freely given information and other assistance.

The purpose of this paper is to report those areas from which material comparable to the Olcott material has been found. The report is of a preliminary nature since only a portion of the areas under investigation are included in this report. When the remaining areas have been authenticated, an additional report will be prepared.

The Pilchuck River is a tributary of the Snohomish River. Its headwaters originate on the southerly slope of Bald Mountain some ten miles due north of the village of Goldbar. The river flows WNW approximately 12 miles (near the old townsite of Pilchuck), continues NW about 7 miles (1 mile west of Granite Falls), turns and flows to the south some 15 miles at which point it enters the Snohomish River just south of the town of Snohomish, Washington. The Snohomish River drains into Port Gardner Bay which is at the northerly end of Possession Sound and the southerly end of Port Susan. This report covers only the last fifteen miles of the Pilchuck River. It is interesting to note this drainage feature was once named Pilchuck Creek (Landes, 1917, p. 225). The first Pilchuck Creek listed by Landes (Landes 1917, p. 225) still retains that name. It drains into the Stillaguamish River some 6 miles west of Arlington. As on the Pilchuck River, there is also a townsite of Pilchuck on Pilchuck Creek.

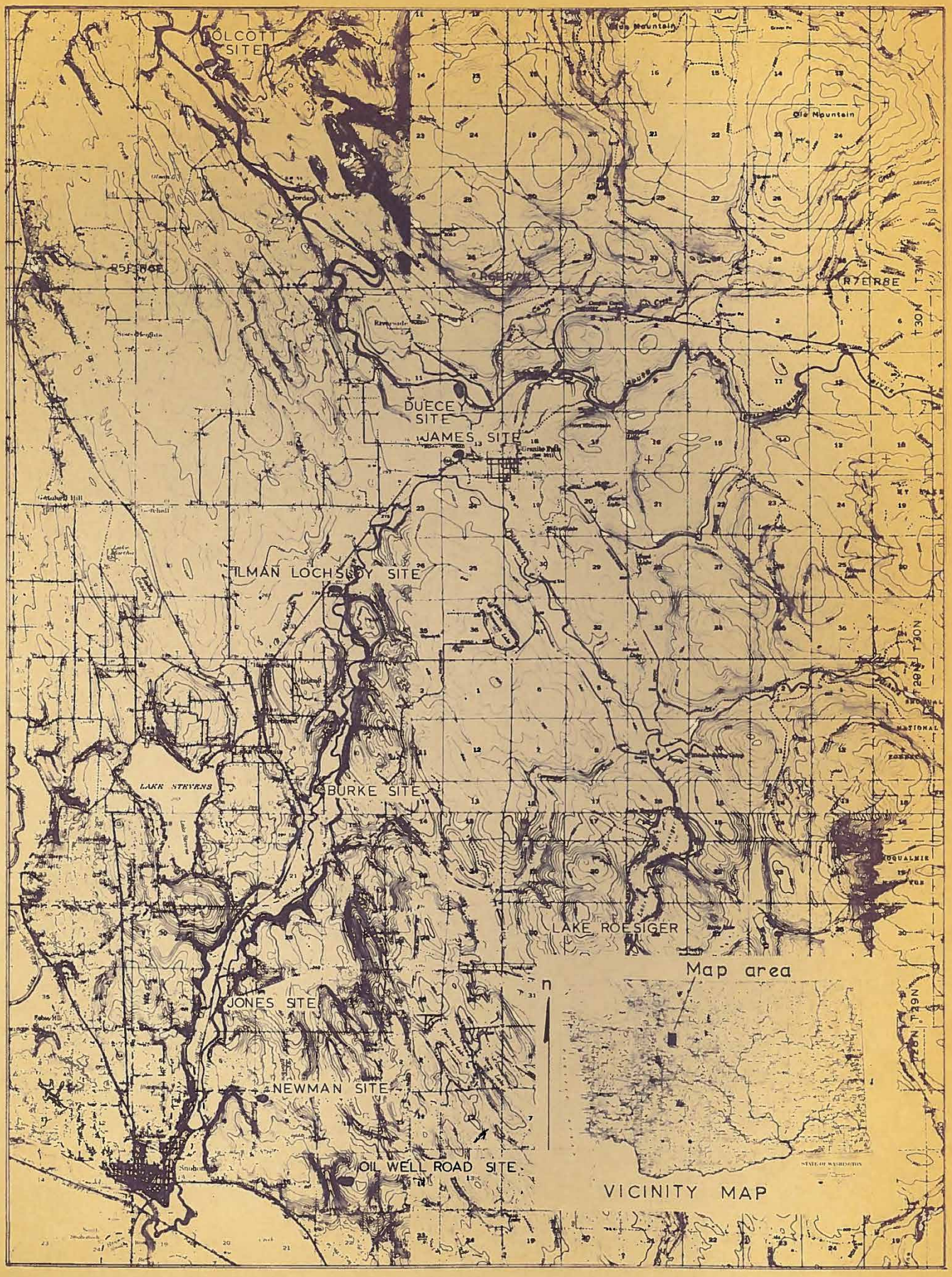


PLATE I — MAP OF SITES

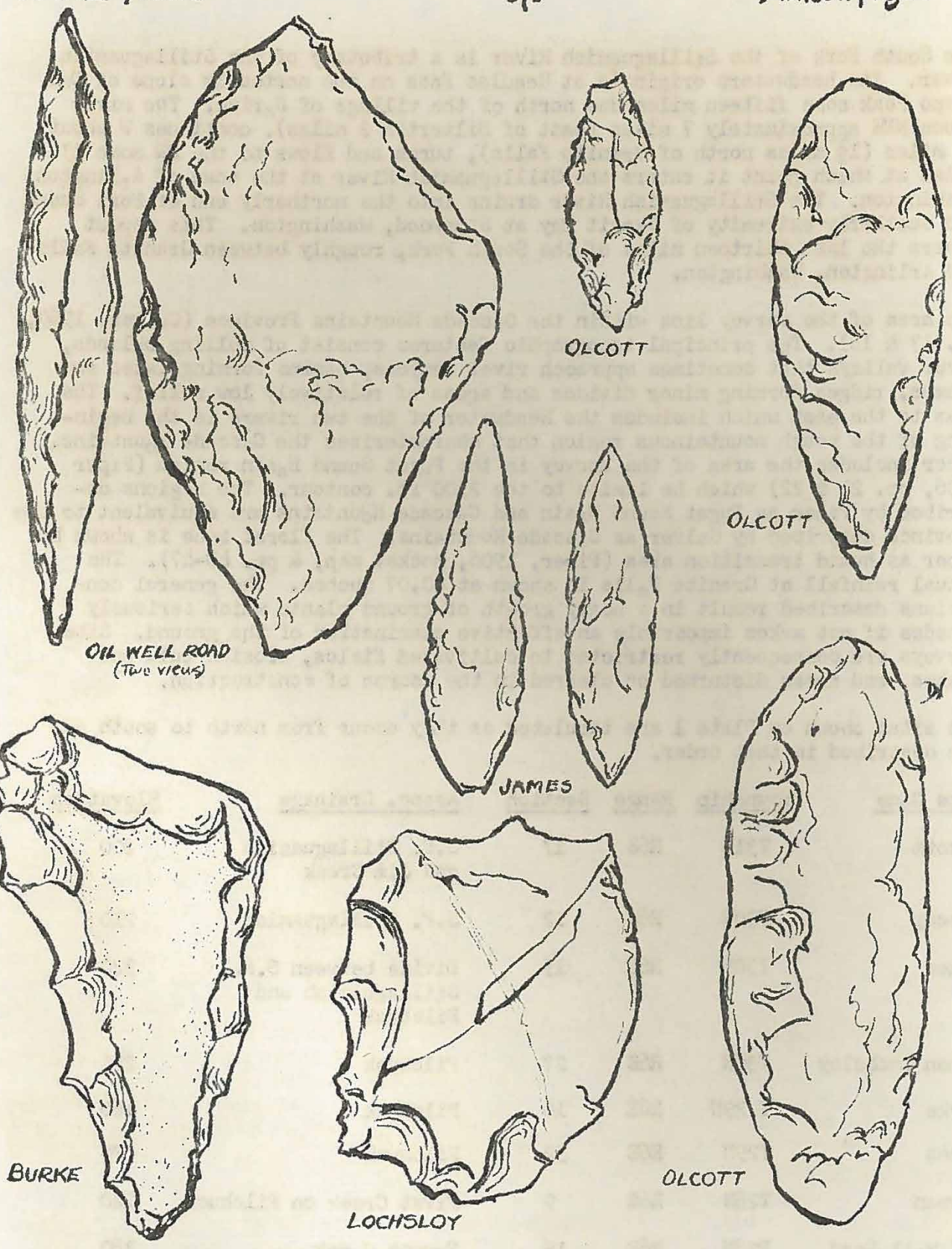
SCALE: Miles 0 5 10 15 20 25

The South Fork of the Stillaguamish River is a tributary of the Stillaguamish River. Its headwaters originate at Headlee Pass on the northerly slope of Del Campo Peak some fifteen miles due north of the village of Baring. The river flows NNW approximately 7 miles (east of Silverton 2 miles), continues W about 24 miles (1½ miles north of Granite Falls), turns and flows to the NW some 13 miles at which point it enters the Stillaguamish River at the town of Arlington, Washington. The Stillaguamish River drains into the northerly end of Port Susan and southerly extremity of Skagit Bay at Stanwood, Washington. This report covers the last thirteen miles of the South Fork, roughly between Granite Falls and Arlington, Washington.

The area of the survey lies within the Cascade Mountains Province (Culver, 1969, pp. 17 & 18). The principal topographic features consist of rolling uplands, river valleys that sometimes appraoch river canyons, basins forming lakes and swamps, ridges forming minor divides and areas of relatively low relief. The area to the east which includes the headwater of the two rivers is the beginning of the rough mountainous region that characterizes the Cascade Mountains. Piper includes the area of the survey in the Puget Sound Basin region (Piper 1906, pp. 21 & 22) which he limits to the 2300 ft. contour. The regions described by Piper as Puget Sound Basin and Cascade Mountains are equivalent to the province described by Culver as Cascade Mountains. The floral zone is shown by Piper as humid transition area (Piper, 1906, pocket map, & pp. 40-47). The annual rainfall at Granite Falls is shown at 60.07 inches. The general conditions described result in a heavy growth of ground plants which seriously impedes if not makes impossible an effective examination of the ground. Site surveys are consequently restricted to cultivated fields, erosion cuts and washes, and areas disturbed or cleared in the course of construction.

The sites shown on Plate 1 are tabulated as they occur from north to south and are described in that order.

Site Name	Township	Range	Section	Assoc. Drainage	Elevation
Olcott	T31N	R6E	17	S.F. Stillaguamish and Jim Creek	200
Duecey	T30N	R6E	12	S.F. Stillaguamish	210
James	T30N	R6E	13	Divide between S.F. Stillaguamish and Pilchuck	320
Ilman Lochsloy	T30N	R6E	27	Pilchuck	245
Burke	T 29N	R6E	16	Pilchuck	160
Jones	T29N	R6E	32	Pilchuck	70
Newman	T28N	R6E	9	First Creek on Pilchuck	120
Oil Well Road	R28N	R6E	15	French Creek	380



POINTS, CHOPPERS, & KNIVES FROM SEVERAL SNOHOMISH COUNTY SITES
PLATE II

All of the locations listed above are in western Snohomish County, State of Washington. Elevations are based on contours shown on U.S.G.S. quadrangle maps.

OLCOTT SITE. The Olcott Site is situated on the east side of the South Fork of the Stillaguamish River and consists of three areas, one between the river and county road, El. 160-190', the second on the ridge between the river and Jim Creek, El. 200', and the third on the terraces adjacent to Jim Creek, El. 130'. The collection includes leaf-shaped points which vary from bi-pointed to straight base, serrated points, choppers, drills, and scrapers. The material is all basalt which is heavily patinated and in some cases weathered. Plate II illustrates some of the typical points. The collection has been made from the cultivated fields. There is an abundance of spall or detritus material including some cores.

DUECEY SITE. The Duecey Site is located on the west side of the South Fork of the Stillaguamish River where the river meanders, flowing north and then west forming a large bend in the river. During a clearing operation for a real estate development which was at bank level a variety of artifacts were exposed and a portion collected by the owner. These include hand mauls, ground stone adze blades and one mortar. A negative aspect to our inquiries concerning the material recovered was that no chipped stone artifacts had been picked up. Bob Crabtree examined the area and did not find any chipped stone or spall material. However, on the next bench which is about 500 feet west of the river and approximately 15 feet higher, he found a quantity of basalt material similar to the Olcott material. Surface collection made at the time of the survey includes a chopper, cores and spalls. The river intersects both levels at each end of the site indicating that these benches apparently are not a product of the present river erosion. The area on the east (and north) side of the river has yet to be examined.

JAMES SITE. The James Site is located on a flat bench of divide between the South Fork of the Stillaguamish River and the Pilchuck River one mile due south of the Duecey Site. Material was collected from this area over a period of thirty years starting at the turn of the century. Those artifacts still retained by the family (second generation) consist of fourteen leaf-shaped points. As in the Olcott collection, the material is a heavily patinated basalt. The similarity goes further--point types and size are the same. The area was located by the description given. While no artifacts were found, there is a good showing of spall material. Plate II shows one of the points from this site.

ILMAN LOCHSLOY SITE. The Ilman Lochsloy Site is located on the level valley floor west of the Pilchuck River in a berry field just north of the townsite of Lochsloy. Surface collection from this site has yielded choppers with the usual distribution of spall material. The material is a heavily patinated basalt. We have not been able to locate points reported to have been collected from this area but the search is continuing. Plate II shows one of the choppers from this site.

BURKE SITE. The Burke Site is located at the southerly end of a hill or drumlin which lies west of the Pilchuck River and is east of Catherine Creek. The site has been partially disturbed by a gravel pit. Several heavily patinated basalt

leaf shaped points and chopper have been recovered. The concentration of detritus does not seem to be as great here as at the other sites but this may be due to the fact that the area is not under cultivation. Plate II shows one of the choppers from this site.

JONES SITE. The Jones Site is located on the east side of the Pilchuck River at the base of foothills which are relatively steep and close to the river. The material collected from this site includes hand mauls, ground stone celts which are comparable to the aftifacts from the bank level at the Duecey Site. Some points have also been recovered.

NEWMAN SITE. The Newman Site is located on a small unnamed creek which is the first creek from mouth to drain into the Pilchuck River and is bound by the Three Lakes Road on the north and the Cunningham Road on the West. Several heavily patinated basalt leaf shaped points have been found there. While the find and location are reliable, further field work is necessary to determine the exact nature and extent of the site.

OIL WELL ROAD SITE. The Oil Well Road Site is located on a hill above and to the east of the canyon formed by a tributary of French Creek. French Creek drains into the Snohomish River a short distance below the Pilchuck River. The ground is presently in pasture, consequently the grass growth covers the cultural materials. The artifacts recovered were found in an area disturbed by road construction. These consist of two-bi-pointed leaf shaped points, one leaf shaped point with tapering sides with a straight base, and one chopper. The material is a heavily patinated basalt. A fragment of what appears to be a crescent shaped knife was also found this being badly weathered. The field on the other side (westerly) of the canyon contains enough spall materials to warrant further investigation. The stratigraphy in this canyon is the similar if not the same as that found at Jim Creek adjacent to the Olcott Site. Soil samples and samples for pollen profiles have been taken from both localities and are currently being analyzed in order to determine the degree of correlation. Plate II shows one of the choppers from this site.

The site survey conducted so far has clearly demonstrated that there is a wide distribution of the sites containing heavily patinated basalt artifacts. The indication is that this represents an early occupation horizon. It is the opinion of those working on the survey that other similar sites will be located not only within but beyond these limits. Likewise, we expect to discover additional sites of the more recent type of site such as the Duecey bank level and Jones Site. The real challenge, of course, is to find a stratified site which will establish the temporal relationship of these two obviously different cultures.

BIBLIOGRAPHY:

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Landes, Henry: A Geographic Dictionary of Washington. Bulletin No. 17, Washington Geological Survey, Olympia, Wash. 1917.

Piper, Charles V.: Flora of the State of Washington. Contributions from the United States National Herbarium, Volume IX, Smithsonian Institution, G.P.O. Washington, D.C., 1906.

Editor's Note: Jack Thomson joined the Society from an interest in the related sciences rather than having a primary interest in any of the many facets of antiquarianism. Since being active in the Society, his interest has shifted to archaeology and he has spent a great deal of time and effort acquiring the knowledge and skills required of the discipline. A long association with the logging industry in northwestern Washington has given Thomson a knowledge of place and person which is of particular advantage in conducting this survey. The survey by the group, the report by Thomson, the many contacts made, photographs, etc., is a good example of the capability of the Society. We might add parenthetically that completed survey forms, photographs, maps and supporting data will be turned over to the Washington State Museum for future use.

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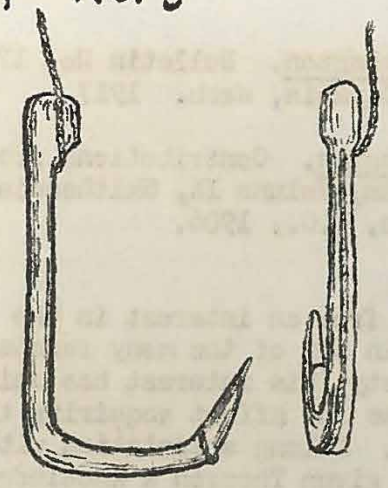
THE FISHING HOOK AS FOUND IN 45SN100

Del Nordquist

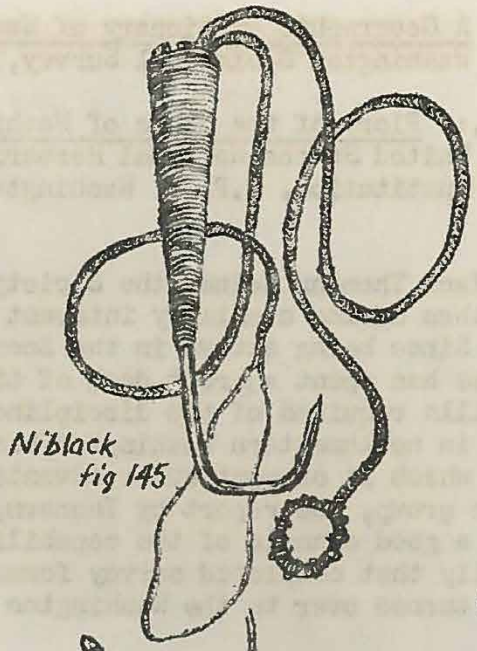
Significant to any fishing site is the evidence of hooks, lines, weights and other equipment used in the taking of fish. The Snoqualmie River site was, undoubtedly, a significant fishing area, for all of the above mentioned items have been found. Weights have been discussed in a previous article in the Washington Archaeologist (Nordquist: 1960, Vol. V, No. 1). Cordage and knots will be considered in a future publication; this article will describe and elaborate on the type of hooks recovered in the 1960 season's excavation at 45SN100.

Four wooden hooks were found. All represent a single type, having a body tapering from the center to either end. One end was fashioned into a small bulb, bluntly terminated and grooved immediately below to receive a cord or line. The opposite end was fashioned into a point, somewhat flattened and turned inwardly. The material from which the hooks was made was wood -- probably a withe or root. All hooks were one piece and unbarbed. Generally, the outside contour was flat; the inside surface, convex in cross-section. The overall curvature of the hooks lengthwise was like a J with a slight back turning just below the bulbous head. (See illustrations, Plate I, lower half).

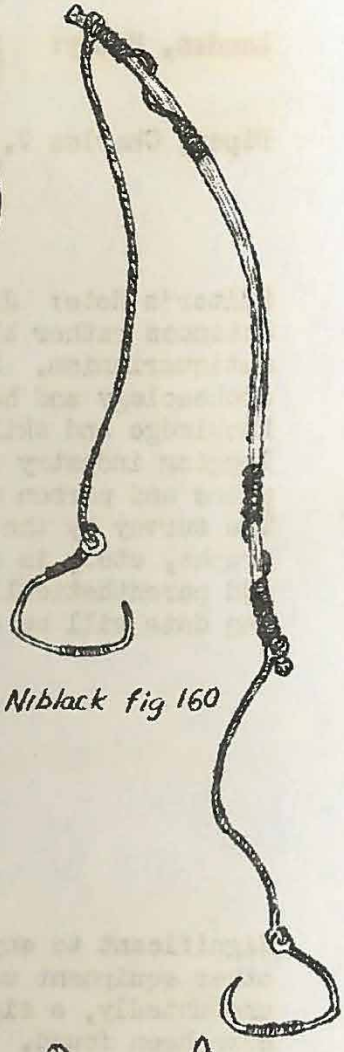
Comparative details are as follows:



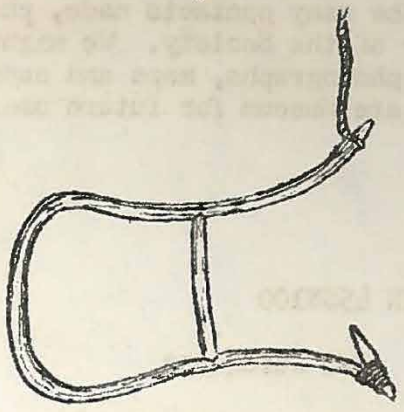
Niblack fig. 149a



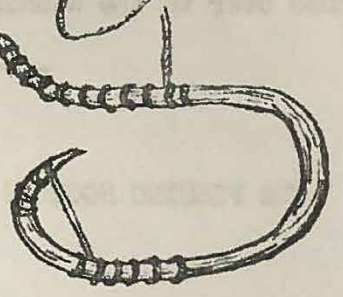
Niblack fig 145



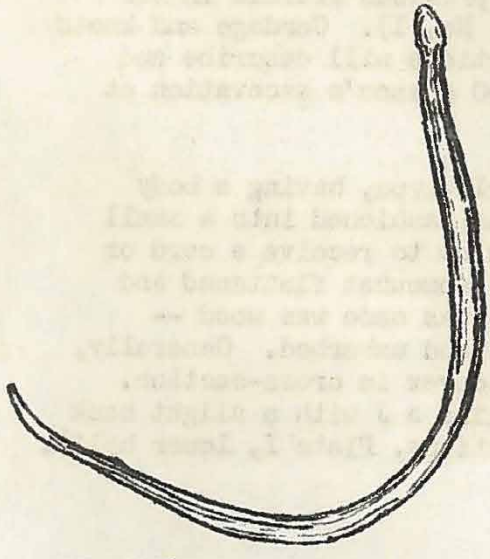
Niblack fig 160

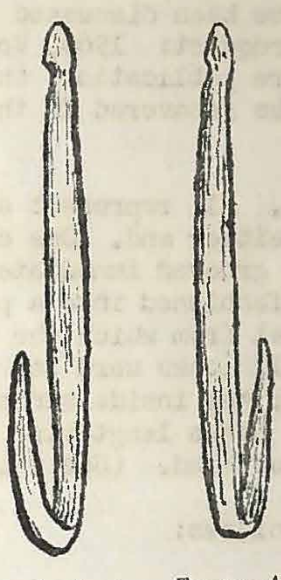


Niblack fig. 148 b



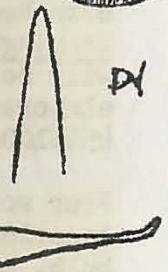
Drucker Cult. Elem. 68



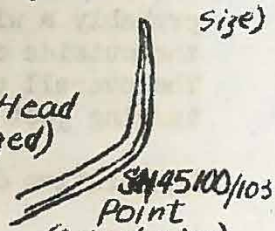


455N100/102 Side view (actual size), Front view, Back view

SN45100/5 Head (a 5x enlarged)



SN45100/101 Point (Two views, actual size)



SN45100/103 Point (Actual size)

PLATE I SNOQUALMIE HOOK & COMPARATIVE TYPES

Catalogue No.	Length	Width *	Thickness **	Comments
45SN100/102	18.5 mm.	6 mm.	4 mm.	This hook has a decided inturned point, 8 mm. long.
/101	13.0 mm.	6 mm.	6 mm.	The point is more spatulate than others & slightly inturned.
/103	12.7 mm.	4 mm.	4 mm.	The hook seems to be the least distorted from its original shape. It has an inturned point 4 mm. long.
/5	11.7 mm.	7 mm.	4 mm.	The point appears to have straightened in situ. Note: This hook is the shortest in length but has the greatest width.

* Measurements were taken from the flat side at the point of greatest width.

** Thickness was measured at the same point as above.

A close examination of the specimens revealed that they have been scraped and whittled by a sharp-edged tool. Since it is currently believed that 45SN100 is a prehistoric site the most likely implement was the knife or scraper. Both have been found in close proximity to the other materials of the site; especially the small trapezoidal and oval scrapers. Most tool marks follow the length of the hooks indicating a longitudinal scraping or cutting action. Cross-grain tool marks are confined to the upper end where chips and grooves were cut from around the head of the hooks (See enlarged detail, Plate I). Hooks of this type were curved by steaming and tying with sinew or fiber until they retained the desired curvature. Niblack[1] refers to such techniques briefly, "A second primitive variety is that made by steaming and bending a tough limb of yew or other wood into the shape shown in Fig. 153, which is a Makah hook from Cape Flattery, Washington Territory." (Figure 153 is a variety of the U-shaped hook set with a bone barb. Figure 148B, a similar example, also from Niblack, is illustrated in this article). Niblack further quotes James G. Swan who lived among the Makah at Neah Bay,

> They are made of the knots of hemlock limbs cut from old decayed logs. These are split in pieces of suitable size and whittled to the required shape, and bent by being steamed into the form which in the skil hook resembles the longitudinal section of a goose egg. The lower portion of these hooks are curved inward to form a barb, and when not in use the two ends of the hook are fastened together by a piece of twine, which is also used to tie on the bait. When the hook is to be used the two parts of the hook are separated by means of a stick or peg, which the fish knocks out when he takes the

1. Niblack, 1888, p. 291.

> bait, and the two ends of the hook close together and hold him fast; the peg floats to the surface and indicates to the Indian that he has caught a fish.[2]

A drawing of this hook is illustrated on the accompanying plate in Figure 148b which shows the peg in place. This hook contrasts with the Snoqualmie type in its basic shape and the presence of a separate barb. There is no indication that barbs were attached to the Snoqualmie hook, in fact, the most significant feature of the latter is its simple one-piece body and its sharpened and inwardly bent point.

Barbless hooks are noted by Niblack[3] among the Tlingit and referred to as a salmon gig. This particular one was made of bone and a string inserted through the body just below the head and carried in a groove along the back to the point. Like the Snoqualmie hook the Tlingit type is a one-piece, barbless, pointed hook with a decided head. From the same authority a modern adaptation of the gig is shown made from iron. It has the same characteristics outlined above, but lacks the groove and line in the body of the hook. Instead, the hook is lashed to a framework which forms a socket to be used with a pole when gigging fish. Two leads extend from the piece, one with a rather loose and large loop which may have been held by the user; the other a smaller, tight circular ring which was slipped along the body of the shaft to anchor the gig in place. It may be of some significance to note that several fiber rings have been taken from 45SN100. Figures 149a and 145 are illustrated in this article, taken from Niblack's report. He describes the use of the gig "for hooking salmon where they are thick and sluggish during the 'runs'."[4]

A more expansive ethnographic description of the method of using the gig or gaff hook is described by Smith for the Puyallup-Nisqually. She suggests, parenthetically, that the gaff and the gig were much the same implement, if not the same to the Indian. Whereas the gaff is ordinarily considered a tool for hooking fish as a secondary means of capture once they are hooked or netted by other means, it is apparent from the following quotations that gigging is intended just as much as gaffing.

> The shaft of the gaff hook was eight feet long of hazel or fir or, occasionally, of seasoned cedar. The hook itself was of hard wood and relatively large. It had no barbs and was fitted against a straight fixture of hard wood which had a slight gouge along its length to receive the straight side of the hook. A string was laid in this gouge between the hook and the fixture and the whole was secured permanently with wild cherry bark and pitch. The string extended eighteen inches above the fixture and fastened with a loop upon the shaft a foot above its end. The fixture was hollowed at the end to receive the shaft. The hook separated from the staff in the same way as with the salmon spear, lessening the strain.
>
> The gaff hook was used in the fall and early winter when fish were plentiful in the rivers and streams. Big rivers were fished from a

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2. ibid. p. 291
3. ibid. p. 289
4. ibid. p. 290

canoe, smaller streams from the banks. When the fish could be seen, only the large he-salmon were taken out, at night or in unclear waters, any weight indicated a fish and was pulled out. Inland informants said that the shaft was held almost vertical so that the jerk which hooked the fish could be made straight up or it was held more or less horizontally with the point down and the pull which hooked the fish was toward the body.

Gaffing was quicker than the salmon spear because the fish could be slipped off the hook without interference from barbs. After the introduction of iron and the decrease in the salmon runs, gaffing hooks were made with barbs. An iron gaffing hook shown the writer by an inland Puyallup informant and used by his mother's mother's brother was two inches across with a single barb on the inner side. The string which was tied on the shaft was wound around the hook beginning just above the curve and this wrapping formed a cavity into which the shaft fit: a device suggestive of the string-wrappingcavity of the barbed salmon spear heads. This hook was said to have had a fir shaft reinforced at the end with ironwood.[5]

The gig appears to have been rather extensively used along the Northwest Coast. A two-pronged, detachable gig is reported by Barnett[6] for the Slaiamun (Powell River Comox) and the Klahuse of Toba Inlet on Vancouver Island. It was probably used by the Sechelt on Jervis Inlet as well. Although Barnett reports its absence from three other Gulf of Georgia Salish, i.e. the Homalco at Bute Inlet, the Squamish, and the West Sanetch, it seems that this absence might be because of a lack of data. The particular gig considered by Barnett was unlike that discussed by Smith, it being more like the fishing spear. A better terminology than gig is leister which is constructed, in this particular case, by two inwardly barbed points set in a V-shaped head. The leister has only a tenuous similarity with the Snoqualmie hook if used as a gig. The two-pronged points were thrust over the back of the salmon, hooking them, rather than piercing them.

Barnett further speaks of a gaff hook[7] like that of the Puyallup-Nisqually, and gives its use among the Sanetch, Cowichan, Pentlatch, Kwakiutl, Comox, Slaiamun, Klahuse, Homalco, Sechelt, Squamish, and the West Sanetch of Vancouver Island.

In his study of culture elements distribution on the Northwest Coast, Drucker[8] makes a definite separation between the gig as described by Barnett and the gaff hook used in snagging fish. Only the gaff hook will be considered since the leister has little, if any, application to the subject being discussed. A description of the gaff is lacking in the present source, but it is assumed that Drucker concurs with most authorities in what constitutes the gaff hook. That described earlier by Smith will be considered valid in this instance as well as among the Indians of lower Puget Sound. Drucker notes the gaff hook was used by the Koskimo and Kwexa Kwakiutl, of somewhat recent introduction among the Bella Bella, and known to the Xaihais or China Hat Kwakiutl. The Hartley Bay and Gilutsa Tsimshian used it. Both the Haida and the Sanyaknan Tlingit used

5. Smith, 1940. pp. 255-6
6. Barnett, 1939. Element 21, see also p. 279 for illustration.
7. ibid. Element 88, see also p. 280 for illustration
8. Drucker, 1950 element 49. He feels the gaff is post contact.

the gaff hook. The absence of the trait was given for all the Nootka of Vancouver Island, the Wikeno Kwakiutl, the Bella Coola, Xaisla Kwakiutl, Gitksan Tsimshian, and the Chilkat Tlingit. Niblack[9] illustrates a modern gaff (he calls it a gig or snag), Figure 145, from the Nimpkish[10] Indians of Fort Rupert, B. C. This example is redrawn for this paper as Figure 145, Plate I. Swan[11] reports the gaff among the Makah at Neah Bay.

The features common to the gaff hook and the Snoqualmie hook may be summarized as a single unit hook, J-shaped, having a barbless point, a bulbous head, and attachments (or place for them) at or near the head of the hook. If the type found in 45SN100 are not gaff hooks the only other likely alternative would seem to be the barbless trolling hook.

Trolling is widely distributed along the Pacific Coast. A variety of hooks are used singly, in pairs (see Figure 160, Plate I) and in a series--as many as fifty on a line.[11] The most common type used is U-shaped either with or without a barb. If barbed, the hook is in two parts. As illustrated in Figure 148, from Niblack, the barb is of wood, bone, or iron set so that it points in toward the body of the hook. The barbless hook is shown on Plate I of this article, taken from Drucker's illustration.[12] The latter was held in shape by string or fiber lashings. Most of these hooks were suspended to a lead that attached to a point midway along the upper side of the hook. These were hung in the water in a horizontal position and, according to Drucker[13] the barbed type was used to catch halibut, cod, and flounder. Drucker repeats Boas[14] who recorded the single-unit, unbarbed hook as having been used to catch kelpfish. He (Drucker) further states that the latter hook was lashed with spruce-root splints instead of sinew as subsequently mentioned by Smith.

The distribution of the two-part, barbed, U-shaped hook is given for all the Nootka except the Nupachisat. The Makah's use of it has already been suggested. All of the Kwakiutl except the Xaihais and the Xaisla, the Bella Coola, and the Hartley Bay Tsimshian report the hook type. The absence of the hook is noted among the Haida, Tlingit and the Gitksan Tsimshian.[14] Barnett[15] gives an affirmation of the trait among the East Sanetch, Cowichan proper, Nanaimo Cowichan, Pentlatch, Kwakiutl at Campbell River and Cape Mudge, and the Comox. It was found among the Slaiamun, probably among the Klahuse, and the Homalxo Comox; also the Sechelt and the West Sanetch. Only the Squamish are reported to have had no knowledge of the hook. Smith[16] refers to it among the Puyallup-Nisqually,

> The hook used for trolling was made of ironwood with an ironwood or bone point. The wood was bent and was reinforced, to keep it from spreading, by a fine string or sinew which stretched across the opening. The point was straight, fastened above the reinforcement string so that the upper end protruded beyond the hook at a slight outward angle and the lower end formed a barb on the inner side of

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9. Niblack, op cit. p. 290.
10. A Kwakiutl group.
11. Boas, 1913, p. 179 among the Kwakiutl. See Niblack, Fig. 141.
12. Drucker, op cit. p. 239
13. Drucker, 1950, op cit. element 58, see also p. 238.
14. Boas, 1909 (See Drucker, element 58, p. 238.
15. Barnett, 1939, element 83, see p. 280.
16. Smith, 1940, pp. 254-5.

the hook. The point was always attached with sinew. The longer side of the hook was notched at the end and equipped with a string leader two to three feet long and with a loop at its end. All of these joinings were permanent. When it was to be used the hook was fastened to the main line, which was three and one-half fathoms long, by the loop in the leader.

The trolling hook was baited by means of a small needle about six inches long. It was of ironwood, round and pointed like an awl, and with an eye like a mat needle. The needle was threaded with the leader and passed through a herring from tail to head. The back of the herring was away from the hook and it was slipped down the length of the straight side so that as the fish went through the water its tail protruded above the point, concealing it. Every time the hook was baited it had to be detached from the main line. The fisherman sat alone in the stern of his canoe. The main line was held in his hands along with the paddle and at each stroke the baited hook darted through the water. Only male herring were used for bait because females do not dart in this way. When the fish were brought within reach, it was landed with a gaff hook or a small spear.

Trolling was mentioned by Haeberlin and Gunther[17], "When the salmon first began to run they were caught in salt water. The men went out in a canoe, the forward man paddling, the man in the stern trailing a line and hook. The hook was of bone and baited with a clam. When the line was not used it was wrapped on a little board called tētK!oba'lō'." A footnote in the same source mentions that Swan stated that Indians never attempted to catch salmon with a baited hook. Swan further stated that the hook was used as a gaff instead. Niblack's illustration of the specimen collected by Swan, Figure 148b (illustrated in this paper exactly in the position in the original drawing) presents a possible discrepancy. If suspended from the end the hook could not have hung in a horizontal position. If the layout's placement is simply an error of the illustrator we assume that the mouth of the hook faced up in a vertical manner making it unlike the usual trolling hooks found on the coast. Unfortunately, without re-examining the original piece nothing can be resolved here.

Drucker[18] was the only ethnographer of those consulted that gave any indication as to the distribution of the single piece, unbarbed, wooden hook. He suggests that the type probably had a wider distribution than his lists indicate. Trade items replaced it rather early and may account for its being unknown to most of his informants. The author recalls seeing a bronze type made by the Makah which represented the type very closely. Informants[19] suggest the hook was used only for cod fishing. The Haida, the Sanyakwan Tlingit and the Xaisla Kwakiutl are the only groups reported who possessed this hook.

It would seem rather unlikely that only a handful of aboriginal groups would have had the knowledge of such a simple, and seemly practical, a hook. Reports of Indians, otherwise strongly related culturally which show a spotty trait dis-

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17. Haeberlin and Gunther: 1930, p. 27.
18. Drucker, op cit. culture element 68, see also p. 239.
19. ibid., same reference.

tribution, are often suspect of incomplete investigation. Trade types may have superceded the older forms very early in the history of the period of contact. It is known that iron hooks were part of the earliest trade commodities used by traders along the Northwest Coast and elsewhere in the Pacific. Adequate informants are few in this region. Another generation will see all likelihood of getting firsthand cultural description gone or so acculturated that remaining forms may only tentatively suggest the original. Outside of museum studies, which if poorly documented can offer only a modicum of cultural information, it remains for archaeology to add to material culture studies. In further pursuance of the 45SN100 excavation, added information must be found to determine whether the hooks taken from the site were gaff or trolling hooks. Many perishable materials have already been found; so it may still be possible to find hooks with line or rod associations that may clarify the actual use of the Snoqualmie type hook.

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