NOTICE: Starting with Volume VII, THE WASHINGTON ARCHAEOLOGIST is reducing its publication from twelve issues per year to four issues per year. This change does not contemplate a reduction of the total annual volume. Longer, more comprehensive papers will be published. Savings in certain of the repetitive costs, the reduction of the tedium associated with a monthly publication will permit both funds and energy to be spent in improving quality.

ANNUAL REPORT 1962
WASHINGTON ARCHAEOLOGICAL SOCIETY

Jack Thomson

A very significant step was taken by the Society in 1962 in the decision to apply for a grant to expedite the completion of 45SN100. The proposal, simple bound, consisting of some forty-five pages and three maps, required twenty copies and was submitted to the National Science Foundation. Although the grant was declined, they were kind enough to invite us to apply again.
Following this, Mr. C. G. Nelson prepared another proposal to cover the publication of work finally completed in the Osborn Bar area. This was submitted to the Grant County P.U.D., and after due consideration, the Washington Archaeological Society was awarded a voucher credit of $1,700.00 to cover the various costs of publication; of this amount, $500.00 has been used toward this end.

A development of some consequence was the closing of the old Washington State Museum with the subsequent change of our status. This leaves the Society privileged to meet in the new museum only once annually, and with no storage or laboratory space as we had previously hoped to have. This change of policy has required some new planning to keep routine running smoothly.

A new meeting program is being considered which will utilize regular monthly meetings as laboratory sessions and provide for quarterly meetings to replace the old system. This is a distinct advance as our laboratory work is of the utmost importance and will allow the members to see what is being taken out and how it is handled as well as making use of those members who are unable to participate in the excavating.

Excavating activities in 1962 were less than in 1961. The Nelsons were busy doing the final work at Osborn Bar preparatory to publication. Several trips were made to 45SK33 where it was noted that pot hunters had been active. Only two trips were possible to 45SN100, this was due to the continued high level of the Snoqualmie which kept us out until the latter part of September, when, by dyking, we were able to get in two weekend trips.

We must keep up the progress, although it is sometimes slow, it is progress that keeps us from vegetating, withering, and dying. It is not possible to stay the same always.

The Society is striving toward completion and the publication of sites which are of known scientific value. We do need professional assistance, but must not expect this help to do all there is to do. We have many professional friends and they are more than generous with their time, so let's dig in and make the best use of what we are given. Every member has some special interest or capability that can be utilized in some area between the trowel and the press.
In the December issue of *Screenings*, The Oregon Archaeological Society, Vol. 11, No. 12, December 1962, John Donovan in his article, "Pity the Poor Potholer," states:

"I have been told by members of the Washington Archaeological Society that they are far better off in the WAS than outside. There is apparently a cooperation between the WAS and the University of Washington people, who attend their meetings and give lectures and instruction in Anthropology, Archaeology, etc.

The members I have talked with tell how the U of W people get sites for them and then supervise the digging, with the WAS members doing the backwork. The material found reverts back to the finder after a reasonable period for study and classification. How can you beat a deal like that?"

While the fictional character of this exposition could be ignored, the statement that must be challenged is, "The material found reverts back to the finder after a reasonable period for study and classification." This has never been the situation. When the Society was originally organized, the charter members not only agreed, but resolved, to observe one of the basic tenets of the professional, i.e., artifacts, data and related materials be preserved as a unit by a bona fide institution. From time to time this question has come up and the members have stood up and been counted. The result: the artifacts do not revert back to the finder. Members whose motivation is not consistent with the aims of the Society have resigned after testing this concept to the fullest. It is neither possible nor practical to be a contributing amateur and a happy 'pot hole r.' It is true that the archaeologist at the University of Washington offered to lead the Society and proposed to build the membership by such an arrangement. The Society declined. It may be that the University of Washington has an agreement of this sort with some other group, but not with the Washington Archaeological Society.
Abstract: The references to dentalia in the literature are cited at length to form a comprehensive memorabilia of its harvest, use and diffusion. The harvest was confined to a few localities on the west side of Vancouver Island. Dentalium was used mainly for ornamental purposes. In the Yukon and Northern California it functioned as currency. As an ornament it was still considered a token of wealth. The trade routes were strongly established and in certain cases followed established economic patterns rather than shorter geographical routes.

One of the most valued articles of trade among the Indians of the Northwest was the dentalium shell (Dentalium pretiosum). This shell is small and cylindrical, shaped like a miniature elephant tusk. It is usually an opaque ivory-white in color, but often has some faint gray or buff rings or is tinted with those colors at the smaller end. It is circular in cross-section and shows rings caused by interrupted growth. (Southern specimens are more likely to show longitudinal sculpture.) These shell are open at both ends, and if found on the beach are not likely to contain the living animal since they live buried in the sand beyond low tide limit, sometimes at great depth. "This mollusk is not so highly organized as some of its neighbors. In fact, its organization is so simplified that it has neither head, heart, eyes, nor gills ....... In life the large end of the shell is the lower, and from it protrudes the bowl-shaped foot with which it digs in the sand. From the small end it throws out little tentacles to ensnare the infusoria and other minute organisms on which it feeds." (Kepp, 1935, pg. 133) The dentalium varies in length from 1/4 inch to over 2-1/2 inches, and tapers from approximately 1/4 inch in diameter at the large end of the longer shells, down to a fine point. When polished these shells take on a rich lustre and resemble ivory.

The dentalium shell is known by various names. It is often called "tusk shell" or "tooth shell" or "horn shell" because of its tusk-like shape. Attempts by early explorers to spell the name given them by the Indians resulted in Gabriel Franchere's "haiqua"; Ross's "higua", and Kane's "ioquas". Early Russians called the shells "tauklis". Denig (1854, pg. 590) reports that among the Assiniboins of the Upper Missouri "A shell, called by the traders 'Iroquois', is sought after by them more eagerly than anything else of the kind."

The source of most of the Dentalium pretiosum which was traded in the northwest was the deep water off the west coast of Vancouver Island. Kroeber says: "The dentalia of northwestern California all came from the north, the northern species of Pacific coast dentalium not growing south of the Puget Sound region and the southern form no farther north than southernmost California. ..... The southern California species of dentalium was sparingly used in the Santa Barbara region, chiefly as a bushing in the perforation through tubular beads."
Drucker has this to say about the source and method of fishing for the shells: "The dentalia fishery of the Nootkans has brought them some fame, as these tribes were apparently the source from which the prized shells were spread up and down the Pacific coast, and inland, in early historic times at least, to the Great Plains. The shells actually grow, as I understand, over a wide area in Pacific waters, but apparently only under rather special conditions do they occur in beds shallow enough for the Indians to reach them with their rather crude sounding devices. Oregon Indians and Haida alike claim to have found dentalia occasionally washed up on the beaches, but such shells were often damaged and lusterless. The Nootkans were the only people who got the live shells from the beds.

"Even in Nootkan territory dentalia grounds were limited. The only known bed available to the Northern tribes was that at Cahços, northwest of Tachù Point, in Ehetisat territory. As mentioned in the discussion of territorial rights, a number of individual chiefs of adjacent groups, Nuchatlet and Kyuquot as well as Ehetisat, owned rights to utilize those grounds. There seems to have been another important bed in Barkley Sound, and shells are said to wash ashore frequently on Long Beach, near Ucluelet. These are the only places of which I heard, although it is possible there were a few other minor ones, where dentalia were obtained.

"The method of bringing up the shells is well known, even though none of my informants had ever actually seen it performed; it was abandoned before their time. A bunch of fine cedar splints were lashed to one end of a long fir pole in a round bundle flaring toward the unlashed end in a form resembling somewhat that of a home-made broom. (Ed. note: This implement is called a grimmet) The bundle was 8 or 9 inches across at the open end. The splints in the center were quite fine, those near the edge, coarser, and around the outside was a row of flat rather wide splints. A hole was cut in a narrow piece of board so it would slip over the end of the bundle where it was lashed to the pole, but would not slip off the flaring end of the 'broom'. Two stones of about the same size, weighing, informants estimated, about 10 pounds each, were lashed in withes and secured to the ends of the perforated board. The dentalia fisherman provided himself with enough additional poles in 15- to 20-foot lengths, to reach bottom at the grounds when joined end to end, and a quantity of good heavy cordage of nettle fiber. He went out to the grounds with the poles and the broomlike affair in his canoe. There he laid the 'broom' in the water, with the perforated board in place. The weight of the stones pulled the 'broom' end down, and the fisherman lashed another of his poles to the upper end, continuing to join the poles till he could sound the bottom. For greatest efficiency of the rather clumsy implement, of course, the stone weights should have almost counterbalanced the effective buoyancy of the poles and board; it may be that the estimates of weights given are a little low. In
any case, when he had enough poles lashed together, he jabbed downward sharply a few times, then pulled up the pole, letting the top lean over till the whole length was afloat in the water. One informant specified a line was made fast to the lower end, just above the bundle of splints, to pull it up by; this sounds like the most practical method. As the gear was raised the weights drew the perforated board down snug over the splints, compressing them slightly. If he had been lucky, the fisherman found a deep-water shell or two pinched firmly between the splints (not, informants insisted, skewered on them); if not, there was nothing but mud and trash from the sea floor. Then he had to unlash his poles, paddle back to the place he had been sounding, for the water was too deep to anchor in, and rig his gear for another sounding. It was a slow laborious task, by all accounts. One hardly wonders that it has been a long time since anyone has gone to all that trouble.

"The fact that the apparatus is an invention of no mean order is worth stressing. The part that made the gear function—the weighted perforated board that made the splints grip any small object inserted between them—is mechanically quite neat. One is impressed by the abstract reasoning involved. A primitive inventor conceivably could work out a new device for, let us say, hurling a spear, in great part by trial and error, for he could actually see what his experimental model was doing. Whoever invented the dentalia gear had to be able to visualize what his equipment was doing out of sight in deep water. He had to be sure enough of it to know that when it brought up no shells on several tries the reason was no shells grew where he made the sounding, until he eventually found the beds (unless he was such a fortunate individual that he achieved success on the first few tries).

"The day's catch of shells were boiled in a small cooking box to remove their unfortunate occupants, and then put into a box of fine sand to polish them up a bit. Informants said rather vaguely the shells were 'stirred around' in the sand — one might guess they were shaken gently back and forth to remove moss-like marine growth that the boiling had not detached. Not a great deal of such polishing was necessary. After some quantity of dentalia had been collected, they were sorted into lots of large, medium, and small shells and stored in small finely woven cedar-bark baskets. The sizes were not measured, but roughly estimated by eye. There is said to have been no particular difference in value of the three sizes, but 'it looked better to have all about the same size on a necklace'. The shells were also sometimes strung on fathom-long strings for storage." (Drucker, 1951, pp. 111-13)

Other methods of fishing for dentalia were described by early visitors in the Northwest (Lutke, Dunn, Davidof). These consisted of weighing the body of a dog, or some fresh meat or fish, or even the body of a slave, and lowering it to the bottom of the sea. After a few days it was raised, supposedly covered with shells. Possibly such methods were occasionally used.

Occasionally dentalium shells were incised in a fine geometric pattern and then rubbed with pigment which remained in the incisions thus making the design stand out more clearly. It is doubtful that this carving was done by the Nootka; but such engraved shells have been found in archaeological excavations on the Plateau and in Northwest California.
Figs. a & b, incised and broken dentalia beads from 45KT3, Osborne Bar

Nootkan Dentalia Gear

(after Drucker)
Ornamental Uses of Dentalia: Dentalium was considered a token of wealth, but outside of the Yukon and Northern California areas where it functioned as currency, the shells were used mainly for ornamental purposes. They were often attached to valued possessions such as pipes, rattles, drums, skin bags, baskets, etc., thus adding to both the value and the appearance of the articles.

The Plateau and Plains Indians often strung the shells on the fringe of garments or hung them loose as bangles. Dentalia were also sewn directly unto clothing with both ends firmly attached. Often they were set side by side so that rows and rows of dentalia formed a solid field of shell around the neck and shoulders of a garment. Denig, in 1854, saw dresses with from 300 to 400 shells on some of the Crow and Blackfoot women. (1854, pg. 590) Only the wealthy could afford such costly garments. The Plateau women sometimes covered their basketry hats with dentalia, either with a band of shell or as a solid covering. Necklaces of dentalia were worn throughout the area, and on the Plateau neckbands, arm bands, and anklets of hide with shells sewn on were worn.

Ear ornaments of dentalia were not popular on the Plains and Plateau, the round white saltwater clam shells being preferred. Along the coast, however, dentalia were much used as ear ornaments and as nose pins, one shell being worn in the pierced septum of the nose. Nose ornaments were less common in the interior areas, although they were used by some groups in the northern interior. Ray (1938, pg. 100) reports that the lower Chinook pierced the ears of the men and the women, both in the lobe and around the rim, five holes being usual for the rim. The shells were hung from these holes. Nose ornaments being worn by the Indians along the coast of Oregon in the year 1792 were mentioned in Menzies' Journal of Vancouver's Voyage (1923, pg. 9): "Each of them had his ears and the septum of his nose perforated, in the latter some of them wore an ornament made of the tooth shell but which they readily parted with on thrusting a small nail in the place of it."

Elaborate head decorations of dentalia worn by Makah girls during the puberty ceremonies are described by Swan (1870, pg. 13): These head pieces consisted of shells run on strings separated by pieces of leather, and were so arranged as to form a "fillet around the head". Large ear ornaments were worn with these, and if they were too heavy, they were attached to the head piece, with the tapering or small end of the shells up. Drucker (1951, pg. 139) says that the hair ornament worn by the eldest daughter for the puberty ceremony consisted of a row of strings of dentalia shell a span wide, spread out flat by means of two or three wooden spreaders wrap-twined in place. These might be two or three feet long. At the lower ends, brass buttons and similar decorative oddments were attached. "A really good hair ornament, such as a chief's daughter would wear, consisted of strands of mountain goat wool, and the protective pad that hung beneath the shells, the atcasim, was also woven of the imported wool. The hair ornaments of younger daughters were similar but shorter, and came in pairs."

"Naturally there was considerable variation in the degree of splendor of these ornaments, depending on the station of the pubescent's family. While the eldest daughter of a high-ranking chief would wear a long pendant of dentalia threaded on goat wool strands, a commoner's lass might be adorned with a hair
ornament of trade beads strung on ordinary nettle or cedar-bark string, unless, of course, some chief loaned her parents a richer set.

"The ownership of the hair ornaments was a special privilege belonging to certain chiefs."

The use of dentalia as part of a weather charm to call the northwest wind was described by George Hunt, Kwakiutl Indian. He said that four ferns were dug, being careful to save all the root. Each was attached to a split pine stick sharpened at one end. Then five dentalia shells were attached to each root, two on each side and one in the center for a nose. The whole root was painted with red ochre and the charms were placed upright beside the fire. The wind was called, and as soon as the fern got warm the wind was supposed to start. (Boas, 1921, pp. 623–4).

Trade and Main Trade Routes: Trade was developed to a high art among the natives of the Pacific Coast. The groups most active in trading and who served as middlemen in the flow of goods from one group to another were most jealous of their positions. "The fact that the Indians knew a good thing when they saw it was made abundantly clear to the representative of Hudson’s Bay Company, Peter Skene Ogden, when he went to survey the possibilities of establishing a post on the Stikine River. Two Stikine Tlingit chiefs visited him and told him, in what Ogden termed somewhat plaintively in his report, 'a tone I was not in the habit of hearing', that they would not permit him to establish a post upriver where it would be in a position to cut off their trade with the interior. A more emphatic demonstration of their belief in the importance of their monopolistic trade rights is reported to have been made by the Chilkat Tlingit in 1852. This group sent a war party nearly three hundred miles inland on a mission, successfully carried out, of capturing and destroying the Hudson’s Bay Company’s post of Fort Selkirk, at the junction of the Lewis and Pelly Rivers. The captured personnel of the post were not massacred, but humanely released with the stern warning, however, that they should stay out of Chilkat trading territory." (Drucker, 1955, pg. 22)

The Indians enjoyed barter for its own sake, and when the early white traders dealt with the Indians they found that the natives had very definite ideas as to how the trading should be carried on. John Lord, a British Naturalist, said that "The Indians have a curious custom in their barterings, which is, to demand payment for each skin separately, and if a savage had fifty marten skins to dispose of he would sell or barter one at a time, and insist on being paid for them one by one. Hence it often occupies the trader many days to purchase a large bale of peltries from an Indian trapper." (Lord, 1876, pg. 58)

Trade routes in general followed the lines of least resistance, which meant the waterways. There was a certain amount of travel overland, of course, even in pre-horse times; some of the Plateau tribes are known to have crossed the mountains to trade in the Puget Sound area. However, such trade was limited to the transporting of small and valuable articles because of the difficulties of such journeys, and while small amounts of dentalia no doubt were traded in this manner, there is no doubt that the bulk of such trade followed the waterways. Lewis and Clark who visited the Columbia River in 1806 remarked that: "The
traffic is wholly carried on by water; there are even no roads or paths through the country, except across the portages which connect the creeks."

A great deal of trading was done up and down the coast. Northward from Vancouver Island there was a constant stream of shell going up the coast through Kwakiutl, Haida, Tsimshian territories until it reached the Tlingit in southeastern Alaska. The Tlingit distributed the dentalia north and east into the Kutchin country between the Yukon and Mackenzie Rivers. Shell also reached the interior of British Columbia by way of the Skeena and Stikine Rivers, and across the Bella Coola mountains into the territory of the Carrier Indians.

The most aggressive traders of the interior B. C. country were the Chilcotin, who were located along the upper Fraser River. They made themselves feared and disliked by many other groups because of their fierce defense of their position as middlemen between the people of the Coast and those of the Interior. Through Chilcotin territory, products came from the Coast and were traded inland to the east, north, and south. One puzzling feature of this northern trade in dentalia is that it seems to have circled around and completely by-passed the Coast Salish who were the Nootka's neighbors on the mainland east of Vancouver Island. Barnett says that: "Curiously enough, the Salish here did not use dentalia either for ornamentation or as a measure of value." (1955, pg. 76). The shell did not pass through Coast Salish territory even to reach the Puget Sound tribes to the south; instead it went north and east through Chilcotin hands, and then according to Teit (1900, pg. 259) it was brought down the Fraser River by the Thompson Indians who traded it back to the coast at the mouth of the river. By this circuitous route the shells reached some of the Puget Sound Indians of Washington. Some of this shell was then traded to the people along the Columbia River by the Puget Sound tribes. "The Nisqually traded largely with the Kikitat, using shell money for payment. Shell money was highly prized by the Indians east of the mountains and the coast tribes used it more in trading with them than among themselves. The shell money which the Kikitat obtained from the Nisqually they in turn passed on to the Indians of Idaho and Montana." (Baerberlin and Gunther, 1930, pg. 11)

Also through Chilcotin territory dentalia were traded south and east, passing through the Okanagon to another distributing center at Colville. From there the main east-west route went across to a point on the Pend d'Oreille River near the present towns of Newport and Usk. This route is discussed by Teit (1930, pp. 355-6): "The great trade route between east and west, both before and after the advent of horses, was by way of Pend d'Oreille River, which was the easiest and the most important gateway through the mountains toward the Columbia River region ......... What may be called the 'western gate' of the Pend d'Oreille route was at a point on the river around Newport and Usk, in the territory of the Lower Kalispel. Here east travel by land and water following the river stopped, and trails led directly west to the centers of the Spokane and Colville through easy country. Travel did not follow the Pend d'Oreille River below this point to its mouth, owing to the northward turn in the river and the roughness of the water and the surrounding country lower down. The main trade route from this point was to Colville, an important trading point and distributing center, only a short distance away. From here one route went up the Columbia to the Lakes, where there were points of contact with Okanagon, Shuswap, and Lower Kutenai; but it seems this was not so important a route as that continuing directly west.
1. NOOTKA (Starting point)
2. KWAKIUTL
3. BELLA COOLA
4. TSIMSHIAN
5. Haida
6. TLINGIT
7. CHILKAT
8. THOMPSON
9. MAKAH
10. QUINAULT
11. LOWER CHINOOK
12. NISQUALLY
13. KLIKITAT
14. WENATCHEE
15. COLUMBIA
16. OKANAGAN
17. SANPOIL - NESPELEM
18. YAKIMA
19. KUTENAI
20. SHUSWAP
21. WISHRAM
22. UMATILLA
23. Klamath
24. UPPER CALIFORNIA TRIBES
25. FLATHEAD
26. BLACKFOOT
27. CROW
28. ASSINIBOIN
29. SHOSHONI

Base map: Driver & Massey, 1957

PLATE NO. 2 - TRADE ROUTES FOR DENTALIA
through an easy, well-populated country to the centers of the Sanpoil and Okanagon, where it joined the Columbia River route, running north to the Shuswap and Thompson, and south to the Wenatchi, Columbia, and Shchaptian tribes. The route from the Colville to the Okanagon was by far the most important for the region to the west and north. The Colville occupied a central position for trading and had fine salmon fisheries. Trade came to their doors; they did not have to go after it. Although the Spokan were also great traders they were rather more like the Klickitat, in that they roamed in search of it and acted to some extent as carriers. They are said to have made frequent trips to the mouth of the Snake and almost annually to The Dalles.

"The 'eastern gate' of the Pend d'Oreille route was near Missoula. Another important point of entry was near the mouth of the Flathead River. From these places branches went north to Flathead Lake, and thence to the Upper Kutenai. From the Missoula district there was a route running south through the Flathead country, by way of the Bitterroot and Big Hole, to the Shoshoni east of the Rocky Mountains. The other main branch from Missoula went to Helena, continuing to Great Falls and the Teton River, and then north to the Blackfoot. However, the exact lines of the trade routes east of the Rockies are not quite clear. Some say there was a main line of travel following rather close to the mountains north and south from the Shoshoni tribes south of the Flathead, to the Blackfoot. The Pend d'Oreille trade route joined this route at one or two points in the Flathead country.

"There was an important main trade route east of the Cascades, following the Columbia River from The Dalles north to the Thompson and Shuswap, and another route in the east, following the foothills of the Rockies, from the southern Shoshoni country north to the Blackfoot tribes. These two routes were crossed at right angles by the important Pend d'Oreille route running east and west. Long ago considerable trading was done near Butte.

"Another trading place was at a point about Great Falls. Nothing seems to be known as to trade down the Missouri from this Point, nor whether there was any all Shoshoni trade route running east of the Flathead country to the Blackfoot. In those days there are said to have been no tribes near by to the east with which the Flathead and Shoshoni traded, the inference being that there was a strip of plains country practically uninhabited to the east of the Shoshoni."

South from Vancouver Island, the coast trade was carried on by the Makah and the Chinook, chiefly by the latter whose territory was located at a strategic place on the north side of the Columbia River at its mouth. "The great fame of the Chinook nation stems from the fact that they were middlemen in aboriginal trade north and south along the coast and between the coast and the interior. They traded slaves from the Californian hinterland up the coast for Nootka canoes and the prized dentalium shells and exchanged many other products as well. It was through their hands that the strings of dentalia from the west coast of Vancouver Island eventually reached the Plains tribes east of the Rockies."

(Drucker, 1955, pg. 12)

The Indians who lived along the Oregon coast did not, themselves, engage in much sea-going traffic because their canoes were not designed for ocean travel. The bulk of the dentalia which reached Oregon and northern California was
traded from the Columbia River at The Dalles, passing through the hands of the Wasco, Umatilla, Klamath, and down river to the California tribes. (Spier and Sapir, 1930, pg. 226).

By far the most important trade route leading inland from the coast was along the Columbia River to The Dalles. Here at The Dalles, the Wishram were the established middlemen, although the Wasco and other adjacent bands also shared in this role. The Wishram did all their trading at home and seldom traveled; they had no need to, since products were brought to them from far distances: from the coast, from the northern interior, from the Plains, and from Oregon and California. The Wishram took these goods in trade and then re-traded them. Dentalia traded for at The Dalles often passed through many hands before it reached its ultimate destination. The Chinook and other lower Columbia people, however, seldom came to The Dalles, and then "they were only the members of the higher classes such as chiefs and important shamans who came with canoes which they traded for buffalo robes." (Spier and Sapir, 1930, pg. 225). Dentalia must have been traded by the Chinook to other Columbia River tribes who brought it up-river to trade.

The Dalles was a famous fishing spot, and it was in the spring during the salmon runs that the Indians gathered there. Ross gives a good description of the activity on the Columbia River in the year 1811: "The main camp of the Indians is situated at the head of the narrows, and may contain, during the salmon season, 3,000 souls, or more; but the constant inhabitants of the place do not exceed 100 persons, but the rest are all foreigners from different tribes throughout the country, who resort hither, not for the purpose of catching salmon, but chiefly for gambling and speculation; for trade and traffic, not in fish, but in other articles. The articles of traffic brought to this place by the Indians of the interior are generally horses, buffalo-ropes, and native tobacco, which they exchange with the natives of the sea-coast and other tribes, for the higua (dentalium) beads and other trinkets. But the natives of the coast seldom came up this far. Now all these articles generally change hands through gambling, which alone draws so many vagabonds together at this place; because they are always sure to live well here, whereas no other place on the Columbia could support so many people together. The long narrows, therefore, is the great emporium or mart of the Columbia." (Ross, 1901, pp. 129-30)

On the whole, the exchange of products at The Dalles was south and southwest versus north and northeast. After horse travel became common, trade from the Plains came overland to The Dalles as well as coming downriver from the Pend d'Oreille route.

Like other Indian middlemen already mentioned, the Indians at The Dalles were not too happy to have white traders taking over any of their business. "The Wishram and Dalles people generally were always more or less hostile to the white traders. They resented the direct trade with neighboring tribes, considering that they should by rights act as middlemen." (Teit, 1930, pg. 122)

Dentalia did not play any important part in the trade between whites and Indians, furs and blankets being the basic units of exchange. However, Drucker says that: "Some traders discovered that certain native products were reliable commodities, so they traded for tanned elk skins at the mouth of the Columbia and
exchanged these for furs with the northern groups. Dentalia from Nootka territory, slaves from wherever they could be bought, and otachchen oil from the Nass were all frequently carried aboard Boston vessels as trade goods. The early Russians used the shells in their trade with the northern peoples, and the English traders occasionally used them. Dr. William Tolmie, chief trader at Pt. Nisqually, listed goods bought from the Indians in the month of September, 1837, among which was "280 ft. Tyukouis" which probably meant 280 fathoms of dentalia. Early English traders attempted to sell porcelain imitations of dentalia to the natives, but without much success.

Trade Value: Among the northern and central Nootkan tribes who fished for the dentalia the shell was not prized as an ornament; they preferred abalone shell for nose and ear ornaments. Even as a trade item, the Nootka had no set value for the dentalia. "Nootkan wealth-concept revolved about economic wealth in the form of territorial holdings; ceremonial wealth, in the form of honorable names, titles, and ritual privileges. Token wealth ranked after these in importance. And the tokens (simply luxury goods of various sorts) were not elaborately graded, and there were no standards of relative values. For example, the big 'war' or 'freight' canoes, used in changing residence and in ceremonies, are almost invariably mentioned in listing valuables or riches. Yet there was no fixed scale according to which such a craft was worth so many sealing canoes, so many slaves, or such an amount of dentalia. The wealth goods could not be used to buy or sell, in the precise meaning of these terms: they could only be bartered. There were rough standards, of course — no one would seriously offer a single dentalia shell for a large canoe — but each exchange was arrived at as an individual case, just like a horse trade in our culture of frontier days." (Drucker, 1951, pg. 110)

However, once the first "middle man" had obtained the shells from the Nootka, the trade value became more precise. The two extremes in rigid price-setting were at the southern boundary of the dentalia trade among the Indians of northern California, and at the far north among the Yukon River Kutchin. Among these groups, the shells were actually used as money. Jenness (1932, pg. 14) says that "beads made of dentalia and serpula shells became a definite currency in at least two areas, among the California Indians in the south and the Kutchin Indians of the Yukon district in the far north. The coast tribes of British Columbia, who either gathered the shells themselves or were in close contact with tribes who did, prized them mainly for trading purposes, preferring for their own use ornaments of the iridescent haliotis shell. The interior and northern natives preferred the beads." "Beads are the riches of the Kutchin and also the medium of exchange throughout the country lying between the Mackenzie and the west coast, other articles being valued by the number of strings of beads they can procure.... To be accounted a chief among the Kutchin, a man must possess beads to the amount of two hundred beavers." (Richardson, 1851, pg. 391)

The most precise and minute methods of measuring the value of dentalia were developed among the Indians of northwestern California, where it was also used as a currency. The method is described by Goddard who worked with the Hupa in 1897-1900 (No date, pg. 46): "The common measure of value among the Hupa was the decorated dentalium shell. ... The shells are wrapped spirally with fish-skin or snake-skin and usually have a tuft of red feathers, probably from the woodpecker's crest.

"The individual shells are measured and their value determined by the creases"
on the left hand. The longest known shells were about two and a half inches long. One of them would reach from the crease of the last joint of the little finger to the crease on the palm opposite the knuckle joint of the same finger. The value of such a piece in early days was about $5.00. The smaller shells which measured about two and three-eights inches were worth about $1.50 each. A shell one and one-eighth inches long was valued at $1.00. The smallest shells (about one and seven-eighths inches long) cost from twenty-five cents each. Shells smaller than these were not rated as money and had no decoration.

"This money was strung on strings which reached from the thumb nail to the point of the shoulder. Eleven of the largest size filled such a string. Twelve shells of the next smaller size composed a string. Thirteen or fourteen shells of a smaller size was the largest number placed on a string. These strings are approximately twenty-five inches long.

"Since all hands and arms are not of the same length, it was necessary for the man, when he reached his maturity, to establish the values of the creases on his hand by comparison with money of known length as measured by someone else. He also had a set of lines tattooed on the inside of the left forearm. These lines indicated the length of five shells of the several standards. The first five on the string were measured by holding the tip of the first shell at the thumb nail and drawing the string along the arm and noting the tattooed mark reached by the butt of the fifth shell. In like manner the last and intermediate sets of five were measured."

This shell money was carried in boxes of elk-horn, often carved on the outside, and sometimes lined with fur to keep the shells from rattling about and breaking.

Among other Indian groups dentalia was used for ornamental purposes and for trading, but not as actual currency. For the Quinault "The unit of value was a string which was slightly over a fathom in length; the string was supposed to sag to a black dot tattooed on the middle of the chest. The largest shells ran 40 to a string, and smallest 14 to 46. The strings of smaller shells were worth less. One informant said that the number of shells over the unit length determined value. Thus a string of 40 with shells large enough so that there were four over the measure was worth four blankets, if five over, five blankets, and so on." (Olson, 1936, pg. 86)

Among the Chinook, Ross (1904) says that the dentalia "increases or decreases in value according to the number required to make a fathom, by which measure they are invariably sold. Thirty to a fathom are held equal in value to three fathoms of forty, or four to fifty, and so on. So high are the higua prized, that I have seen six of 2 1/2 inches long refused for a new gun. But of late, since the whites came among them, the beaver skin called enna, has been added to the currency; so that, by these two articles, which form the medium of trade, all property is valued, and all exchange fixed and determined. An Indian, in buying an article, invariably asks .... how many higua? or, how many beaver skins is it?" Ray says that "the sizes of the units in which goods were sold was also highly standardized and baskets serving as containers were conveyed in any transaction along with their contents." (1938, pg. 100). This practice would have meant that baskets, as well as their contents, were traded far from their place of origin.
The value of dentalium is also commented on by Gibbs (1877, pg. 213). Among the tribes of western Washington and northwestern Oregon "its price depended entirely upon its length; forty to the fathom being the standard of value. When the shells were so short that it required more to make up the required length, they were of very inferior account, but rose proportionately with increased size. A fathom of forty was formerly worth a slave, and even now will bring five dollars in money. Single shells were shown me on the Tahalis for which the owner refused a dollar apiece. This money is, however, becoming scarce, and is far less used than formerly, at least by the tribes who have much intercourse with the whites."

The following trade values for dentalia are listed by Teit for the Thompson Indians of British Columbia (1900, pp. 261-2):

- 1 large dressed buckskin: 2 fathoms of dentalia
- 1 Hudson Bay tomahawk: 2 "
- 1 canoe: 3 to 3½ "
- 5 pk. Indian-hemp bark: 3 to 3½ "
- 1 good slave: 10 "

Plus 2 dressed buckskins and 1 dressed elk skin.

On the Plains, the Assiniboin Indians were paying $3 for 10 shells in the year 1854; and, as has already been mentioned, Denig saw dresses ornamented with 300 to 400 shells. At the price of 30¢ per shell, these dresses would have cost from $90 to $120 just for the dentalia.

After the white traders began to bring goods in quantity to the Indians, the dentalia ceased to function as a medium of exchange. Hudson Bay blankets took its place; these were graded from "one point" for the poorest quality to "four points" for the best. The number of points was woven into the edge of the blanket, and the 2½ point blanket became the established unit by which other values were determined.

The shells continued to have value as ornaments, however, and it is interesting to note that their value in money today is about the same as in 1854. They were being sold on the Yakima reservation in 1960 for 35¢ apiece, or 3 for $1.00, by a traveling trader in Indian goods. These shells were medium to small in size. Two years later, in 1962, this same dealer told me that he can no longer get this northern dentalia; instead he had a supply of shells similar in size and shape but with longitudinal sculpture, which he said came from California. These dentalia were stark white, lacking the rich ivory color and the gloss of the Nootka shells. The Indians were reluctant to buy it, wanting the "old kind". The dealer also had a few very large dentalia, about 5 inches long and 1/2 inch across at the large end, which he thought came from Japan. These also had longitudinal sculpture; they were ivory in color but not very glossy, and were looked upon by the Indians as a novelty but were not much liked.

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Descriptions of the material culture of the Indians of Washington was recorded by only a very few of the early settlers who realized the value of such scholastic endeavors. Reverend Myron Bells, a missionary at the Skokomish Reservation, is one of the first authors to deal at great length the Indians of Puget Sound. His and similar publications have been out of print for many years and the remaining copies has a limited distribution. In order to make this type of material available to our members, the WAS will publish reprints of this early material. The first of a series appears in this issue. The Editor.

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PUGET SOUND INDIANS
Locomotion and Transportation

Myron Bells

ABSTRACT: The chief mode of travel of the Puget Sound Indians was by water. Three kinds of canoes were used: (1) the large or Chinook canoe, (2) the shovel canoe, and (3) the Twana fishing canoe. Four styles of paddles are described. Other appurtenances, i.e. sails, poles, oars, and bailers are discussed. Modes of land travel were patterned after the white settler's practices.

TRAVELING BY WATER. This is the chief mode of travel by these Indians, as with the exception of the Chehalis Indians, their land is all situated on the shores or tributaries of Puget Sound. The Clallams own larger canoes and are better navigators than the Indian farther up the sound, as they live on the Straits of Puca, where there is less protection from the ocean winds than in the upper sound. The following are the accounts of two trips which I have made with these Indians in canoes, for a distance of ninety miles and back, in which they had their own way in nearly all cases, and in which were exhibited most of their characteristics of this mode of transit. The trips were from Skokomish to Dungeness and return.

On Wednesday, January 30, 1878, I started with about sixty-five Twanas in seven canoes to attend a potlatch. We paddled until about noon, when it began to rain, and also blow favorably, so that nearly all except those who steered were able to keep tolerably dry. A few had oil-cloth coats, a few used umbrellas, but the most used their common mats, which are almost waterproof. It was rather comical to see a number of persons, mostly women and children, sitting in a canoe with a mat stretched over them, extending almost from one end of the canoe to the other. From a side view only their heads were visible. Towards evening, after traveling seven and a half hours, we arrived at Seabeck, there all of them stayed in Indian houses.

The next forenoon it rained heavily, so that they did not start; and at noon, although it had stopped raining, they determined not to go on that day, giving as excuses that there was a head wind, that they could not reach any house by night, and that if it should rain at night they would get wet, and that they were afraid that they would be the first to reach the potlatch, which they did not wish; hence, I say that it was useless
to urge them. They spent the afternoon in gambling, and in getting ready. Some of them made a fire of pitch-wood and cedar on a board. Then, putting their canoes on blocks about a foot high, they put fire underneath, moving it along the whole length of the canoe, so as to burn off all of the moss and other material which might have accumulated on the outside of the canoe. They do this because the canoe will run more easily after this is removed.

On Friday morning they set the time to start at half past seven o'clock, but at seven a messenger came for me, saying that they were all ready. I hurriedly ate a little breakfast, and went to their place of lodging. Four of the canoes had gone, but the one in which I was traveling was not even loaded. It took not less than fifteen minutes to load it; then it was said that a young man of their company was sick, so they stopped to doctor him with their incantations, and it was half past eight before we started. One more canoe with ten persons was here added to our company. The wind blew quite strongly and favorably, at times as much as our crafts would bear. There was, however, a fellow feeling among all, for no single canoe of either set of four was allowed to be far away from the rest, for fear of some accident. If one could not keep up, the rest waited for it. In eight hours we traveled about thirty-five miles, and arrived at some Indian houses, within three miles of Port Townsend, where all camped. It had rained all day. We did not stop for dinner, but all ate a little lunch at noon in their canoes. At morning and night they ate warm meals. The next morning they had a short tamahcous to obtain fair wind and weather. It consisted of singing, pounding on the drum and on sticks. About eight o'clock we started and in an hour reached Port Townsend, where the Indians spent nearly two hours in purchasing things to present to the principal men at the potlatch. We then proceeded, having a pleasant day. At one time quite a race took place, in which nearly all the canoes took part. As there was very little wind, it was mainly a trial of strength and endurance, and was done for mere sport. It was kept up for two or three miles, until one canoe had passed all the rest, and the losers were satisfied that it was useless to contest longer with it. That evening we reached our destination about half past five o'clock, having made the entire trip in twenty-two traveling hours.

We set out on our return to Skokomish on the eleventh of February. It was eleven o'clock before we started, and the Indians intended to travel only six miles, camp at Sequim and visit those Indians; but the wind and weather proving favorable they passed Sequim bay without going into it, and camped within five miles of Port Townsend. They would have gone further, but the wind was blowing so strongly that they were afraid to go around Point Wilson, which is a dangerous place when the sea is rough. Here they camped out, away from houses, the first time during the trip. In the summer they often do this, but in the winter they do not like to do this, especially if the women and children are along. It was a calm night and they did not make much preparation for camping. Some of them slept in their canoes, but most of them lay on the ground, a part of them fixing up their sails to shelter themselves from the wind.

The next morning I was up at six o'clock, and called them, but they heard the wind blowing, and thought that it would not yet be safe to go around Point Wilson, so they did not get up. But in an hour it had
calmed down, so they concluded to go, they started without any break-
fast, and went to Port Townsend, where they stayed until noon. After
this most of them went three miles further and camped, but the owners
of a few smaller canoes feared to cross the bay, for it was quite rough.
As I had business in town, and my companions wished to dig clams during
the rest of the day for the journey, the delay was acceptable.

We started about eight o'clock on the following morning, and to shorten
the distance, some of our party took another route, where we were obliged
to make a portage. Often in doing this, when there are only a few
persons along, they unload the canoe, and take the articles and canoe
across separately. This time, however, there were so many present that
they were able to drag the loaded canoes across, having first laid sticks
down on the ground, across which they were hauled. During the day there
was another race, similar to the one already described. We reached Port
Gamble about two o'clock in the afternoon, and some thought it best to
proceed, but the Port Gamble Indians invited my companions to spend the
night with them, and partake of a small feast, which invitation they con-
cluded to accept. They feasted chiefly on potatoes and rice during that
afternoon and evening, sitting around a few kettles of rice and taking
the food out with their large ladles. One man said that he ate three
times during that evening. After dark the women assembled in one house
and sat down in two rows, opposite each other, then they sang for an
hour or more, accompanied by drumming and pounding on sticks. Then
this was over two of the Port Gamble women made presents of from five
to twelve yards of calico to each of the Twana women; and after nine
or ten o'clock some of the Twanas and Clallams of Port Gamble began to
gamble and kept up their game until three o'clock in the morning.

The next morning there was another feast, which consisted of bread,
crackers and coffee, and as they could not eat it all, some of it was
carried away. It was half-past ten o'clock before we fairly left Port
Gamble. We hoped to reach Seabeck, twenty miles distant, by night. But
soon after starting we met a strong head wind, which grew stronger and
stronger. Sometimes, especially in rounding points, we were obliged to
use poles to push the canoes, and they aided very materially, as it was
very difficult to get along without this kind of help. The Indians sel-
dom carry poles for this purpose, but generally use some poles belonging
to their sails. About three o'clock in the afternoon most of the Indians
gave up, tired out, and encamped. Only one canoe reached Seabeck that
night, and that was the one which belonged there. The rest were scatter-
ed singly and in groups of from two to four for a distance of four miles,
some of them having got only about half way to Seabeck. Our canoes were
not all together again after that, but the Indians were now in familiar
waters and felt uneasy about each other's safety no longer. I was camped
with a part of four canoes. The wind blew violently that night, the
trees were falling constantly near us, it rained hard and it was with
great difficulty that we made a fire. A few had tents; others arranged
their sails for shelter, and the rest arranged their mats on poles
placed in the ground so as to lean in a slanting direction, and thus
kept off most of the wind and rain.

About three o'clock the next morning an unusually high tide arose,
covering all the beach where we were encamped, and compelling us to
leave, the water rising from six to twelve inches in our camp before we could get all of our things into the canoes. We went to Seabeck for our breakfast, reaching that place by seven o'clock. That was a cold morning ride, as we were wet, the wind blew somewhat against us, and we had to take turns in rowing and paddling in order to keep from suffering with cold. Other canoes came in later. We remained at Seabeck about three hours and a half, in order to get comfortable, and then again started, and although there was some head wind, we traveled fifteen miles more before five o'clock, about which time we made camp. Six of our canoes were now in company, the other one remaining in Seabeck for the day. That night I witnessed a silent tempestuous over a sick woman.

We encamped on as high ground on the beach as we could find, but the next morning about four o'clock the tide was so high as to compel us to rise for fear of being drowned out; but the water came only to the edges of our beds. Some of the canoes started about five o'clock and reached Skokomish about half past ten, having a fair wind a part of the time. Others waited till after daylight and breakfast, and did not arrive until two or three hours later. Thirty-three hours were occupied in traveling on our return trip.

The following are a few items in regard to another trip which I made over the same route in July, 1876 with this important difference in circumstances: that it was with one canoe and in the summer, instead of with many canoes and in the winter.

With one man to steer, one to row and two women to paddle, we left Skokomish about six o'clock in the morning, but nothing occurred worthy of interest during the day, and at six o'clock we camped on the beach without tents, having traveled thirty-five miles. The next day the crew wished to start early, and I gave them permission, so we were off about three o'clock in the morning. They took a cold lunch about seven o'clock, and we were at Port Townsend, thirty-five miles from the night's camp, by four in the afternoon. The wind, however, was so strong around Point Wilson that they dared not venture, although they were accustomed to the waters, as they were Challams, and these were home waters. The next day the wind blew so strong that we were obliged to camp there all day. The following day the wind died down and they wished to go, but as it was the Sabbath I forbade them. On Monday morning at two o'clock we again started and arrived at Dungeness at eight o'clock, having traveled twenty miles that morning. We had no favorable wind during the whole trip though when we traveled we had but little head wind and made the ninty miles in thirty-one traveling hours.

In returning we left Dungeness at four o'clock in the morning and were at Port Townsend by ten o'clock, where we remained four hours. We then set out for Port Gamble and reached that place—twenty miles—by half past six in the evening. There we remained for the night with the Indians of the place. The next morning, because of missionary work, we did not start until nine o'clock, and during the day we were detained two hours for the same reason, so that we traveled only thirty-two miles during the day. The following day by one o'clock P. M., we reached home, eighteen miles further, having had a favorable wind most of the time. We made the whole distance in twenty-three trav-
I have traveled a few thousand miles with them in their canoes, but usually they have had to travel so as to suit my convenience, but in the above two trips I let them have their own way in the main.

I once went thirty miles in five hours in one of their canoes before a strong wind. A part of the time we used two sails, but at last the wind was so strong that we were obliged to take down one of them. But the quickest trip I ever made was a sail of eight miles in one hour. At both of these times I had good canoes and experienced navigators—Clallams—else it would not have been safe. Few of the Twanas would have dared to sail in such winds.

In addition to the tamahnoos, or incantations for wind, mentioned in the first of the above trips, they would formerly, especially in a calm, when they wished for a fair wind, pound on the canoe with their paddles or strike the water with them, spattering it forward, and at the same time whistle to induce the spirits to favor them.

Their travels were formerly confined mainly to the places where those reside, among whom they are inter-married. Since the coming of the whites a few have been to Oregon, where a few of their children are at school, and a few have been on sailing vessels to California. These distant travels, and knowledge which they have gained therefrom in regard to the whites of the more thickly settled regions, have been of great advantage to them.

**Canoes.**—These are "dug-outs" made from cedar trees. In making them they formerly burned them out, finishing with their hand adzes of stone. But now they universally use American axes and adzes in the first part of the work, and the hand adzes or rasps for the second part, although the finishing touch is sometimes put on with the curved knife, described in the same chapter. After this they are steamed, by filling them with hot water and throwing in heated stones to keep it warm, so that they can spread the sides further apart, and fastened thus with cross pieces, or thwarts, which are round or flattened, and an inch and a quarter to two inches in diameter, the size varying with the size of the canoes. Holes bored through the end of the cross pieces, and the sides of the canoe admit ropes of cedar, which hold the cross pieces in position. A rim is made for the upper edge of the canoe, about an inch in diameter, which can be replaced when worn out. This is generally of fir—a harder wood—as the wear on the rim is considerable in paddling.

The canoes in use are three kinds:

1. The large canoes, often called Chinook canoes. These are made chiefly by the Indians of British Columbia, and imported, but they are used very extensively by all the Indians on the Sound for carrying large loads and for dangerous traveling. The one from which the figure is taken—one of good size—cost a hundred dollars when new. It is thirty-five feet long, five feet wide at the center, with a perpendicular height from the ground of three feet at the stern (a), two feet three inches a foot from the stern (b), one foot, ten and a half inches a quarter of the distance towards the bow, and in the middle (c,d), two feet at a place six feet from the bow (e), four feet six inches at the
top of the head a foot from the end (f), and four feet one inch at the extreme end of the nose (g). There are two places for masts—near the middle (i), and near the bow (h). Near the stern (k) is a seat for the one who steers. The head of this kind of canoe is a separate piece of wood. Such canoes are made both larger and smaller than the one here described—the largest of which I have known, being the one exhibited at the Centennial at Philadelphia in 1876—which was sixty feet long and eight feet wide. None as large as this, however, are used on Puget Sound, the largest which I have seen among them being thirty-six feet long, six feet wide and three feet deep. The smallest that I have seen was about eight feet long, but these small ones are not common. In traveling in these I have never learned that there was any special place for any person except in regard to the steersman. He formerly was a slave. When time with them was worth very little they preferred to wait for favorable winds. They put a slave to steer, wind or no wind, he must always be at his post.

2. The Shovel Canoe. These are scarce among the Twanas and Clallams. They are used in much the same manner, and made about the same size as the next kind, and differ from them mainly in that the ends are from a foot to a foot and a half wide, instead of ending at a point.

3. The Twana Fishing Canoe. These are very common, and are made by all the tribes on the sound. They are entirely of one piece of wood, except that some have the movable rim, mentioned as being on the large ones. They are used for fishing, hunting ducks, traveling on rivers, and even on the Sound, when it is calm and they wish to take only a small load. I have traveled thirty miles in this kind on the Sound, have crossed Hood's canal in one when there was considerable wind, and we were in the trough of the sea, for the larger ones will stand quite large waves. They vary in size from about twelve to thirty feet long, from twenty to forty-eight inches wide, and nine to twenty inches deep in the center.

Sometimes two of the larger canoes are fastened together side by side, and covered with boards, in order to carry a large amount of hay, or ferry a horse for a long distance on the Sound; but not for crossing rivers, as there are none in the country so wide that a horse cannot swim across them.

I have never known any of these Indians to use the Haida canoe, although the Haida Indians often roam over these waters in them. They are made with the stern much the same shape as the bow, so as to better ride the great waves of the ocean, instead of being square at the stern as in the Chinook canoes. It seems a little strange that these Indians should not occasionally get them, since they are so well adapted to rough waters, and the lower Clallam waters are about as rough as the ocean, and since they import the Chinook canoes from the British Columbia Indians, but so it is. As far as a Haida canoe is seen, so far it is known that no Puget Sound Indians are in it.

Boats.—A few of these Indians own skiffs and boats of American make, though I have never known but one of them who could build such boats. He was brought up with his step-father, a white man, but never had much instruction in the art, picking up enough knowledge, as he studied boats, by taking them to pieces and watching ship-builders at work, to build both skiffs and a sloop. The Indians generally prefer their canoes to
boats, as they are lighter and more easily managed, and the larger ones are safer in rough waters than boats. The smaller ones tip easily, but being accustomed to them from infancy, they seldom upset.

Paddles.- The common man's paddle most generally used on Puget Sound is about four and a half feet long, with the blade two and a half feet long and five inches wide at its widest place. The women's paddle is a little shorter and broader in the blade, as the stroke of the man is deep and pushing, while that of the women is quicker and more slashing. These are generally made of maple.

The Makah paddle is imported from the Indians of that tribe, and used considerably by the Clallams and a little by those tribes farther up the Sound. The larger ones are about five feet long, with the blade three feet long and seven inches wide, though many are smaller. They are used by the Sound Indians often in steering, especially in rough waters. They are generally made of yew. Once in a long while a Haida paddle is seen among the Clallams. The large ones are five and a half feet long, with the blade three and a third feet long, by six inches wide. They differ from those already described in having wider handles and round instead of pointed ends. Some of them are very fancifully painted, though I do not know that I ever saw one of these fancy ones in use; they are generally painted to sell.

The Chehalis, or river paddle, is about the same size as the kind first described, in common use, though fully as long, but it differs from it in that the end of the blade has a piece cut out so as to leave it somewhat in the shape of the letter U. They use them with advantage in rivers where logs are numerous, the end of the paddle fitting on to the log and so enabling the rower easily to push the canoe away from it. They are not, however, in common use on the Sound. They get their name from the Chehalis Indians, who live on the river of that name.

These four are all the varieties I have seen in use among these Indians.

Oars.- They knew nothing of these until the whites came. Row-locks either of wood or iron are now fitted into most of the larger canoes, so that one or two pair of oars can be used, but paddles are also used in connection with them. In dangerous waters they lay aside the oars and use the paddles entirely as being safer. They often make these oars of fir or cedar, but sometimes buy them. The small canoes are propelled entirely by paddles.

Sails.- These are used with the larger sized canoes of all kinds, and the largest canoes often have two sails. Formerly the cedar bark mat was used, but these are now entirely out of date, and those of cloth, fashioned and fastened after the style of American skiff sails have taken their places. Many a sail has been made entirely of flour sacks, and the flour brands on them in every shape sometimes look rather comical.

Poles.- In traveling against a strong wind, especially around points of land near shore, where the water is not deep, or when ascending a swift shallow river, poles about twelve or fifteen feet long are often used very effectively for pushing. Generally they are poles connected with the sails.
Rudders.— They have not yet adopted the American style of fitting rudders to their canoes, but prefer the old way of steering with the paddle, for they can steer and paddle at the same time, and the shape of the fishing and shovel canoe is not well adapted for fitting rudders to them. A rudder might be fitted to the stern of the large canoes quite easily, but only once have I seen this done. Usually the best paddle is used for steering. The steersman is in these days selected according to circumstances. If the water is rough, the strongest and most experienced navigator steers, but if the rowing is hard and the steering easy, the strongest person is put to rowing, while the weaker one, perhaps a boy or woman, steers. I have more than once been in canoes when it required two persons with oars to steer.

Anchors.— These formerly were made of stone, but now some kind of old iron, probably some large ring, is used. The only stone anchor I have seen, though others similar to it were formerly used, was found in a shell bed and burning ground at Desvalloph, on Hood’s Canal. It is evidently a natural stone, except that the groove around the middle, around which the rope was fastened, was hammered out with other stones. This groove is about two inches wide and a little over half an inch deep. The anchor is about fourteen inches long, seven and a half wide, four and a half thick, and weighs twenty-five and a half pounds.

Mr. E. P. Brinnan, of that place, who found this one, also told me that many years ago he found another near the same place, which has been lost. It was somewhat in the shape of a grindstone, about a foot in diameter and four inches thick, with a hole through, much nearer one edge than the other, for the rope.

Bailing Vessels for Canoes.— These are of three kinds. (1) Of wood. This is usually from five to seven inches wide, about nine long, exclusive of the handle, which is three or four inches long and a half deep. The dipper is diamond shaped. (2) Of wood, and alder is preferred in making both this and the previous kind. It is rectangular in shape at the rim, the sides and ends tapering almost to a point inside. It is about ten inches long, six wide and two and a half deep. It has no handle. There is a groove nearly half an inch deep at the bottom on the outside, and the hand is clasped to this and the rim. (3) Of cedar bark. This style is not often used. The handle only is of wood. It is about six inches long and four and a half across, with a depth of near an inch. It is shaped like about an eighth of a cylinder, just as the bark is taken from the tree. This bark, after being taken from the tree, has about four inches of each end, bent at right angles, and gathered and fastened to a stick, which is parallel with the main part and is the handle. The hand is often used also in throwing water out of canoes, and sometimes it is thrown out with a paddle.

Traveling on Foot.— Commonly they travel only short distances on foot, seldom more than ten or twelve miles, except when hunting. In coming to the Twana potlatch of 1873, however, the Quinault Indians came about one hundred miles, chiefly on foot. There was too much land travel to allow them to come in canoes, and a little water travel, enough to prevent their using horses, even if they had owned them.
In their short journeys, however, they, especially the women, often carry large loads. In doing this they take the carrying straps, tie the ends, which are several feet long, around the load when it is of wood, mats and similar articles, or into the handles of baskets when filled with potatoes, fish, apples, and other small things, then they put the load on the back, place the flat part of the strap around the forehead and move along. Formerly these straps were made of some tough bark, braided, and were of the same shape as those now used, but with hardly any artistic work. Now they are of strings and colored rags woven. The strap is form a foot to a foot and a half long, and from two to three inches wide with the rope at each end perhaps five feet long.

Snow Shoes.—These are scarce, and are not often used, except when hunting in the mountains, as the snow does not usually lie deep and long on the shores of Puget Sound. They are commonly oblong, fourteen by eighteen inches, with a rim of hazel wood, across which thongs of hides are stretched. The heel is near the center the toe extending to the edge. It is fastened to the foot by means of thongs.

Land Conveyances.— Horses are used much more by the Twanas and other Indians up the Sound than by the Clallams, whose land is so mountainous as not to admit of them being used very successfully. Previous to the coming of the whites water travel was so easy and roads so poor, owing to the heavy forests, that they did not use them much, if at all, and so took very little pride in adorning their saddles and horses with trappings. Since the country has been settled by Americans, they have adopted the saddles made by them, which are also without trappings. Occasionally their horses are shod, but not usually. Sleds have long been used, but wagons are gradually being used by them as they get rich enough to buy them.

For some reason the word for horse, ste-a-ke-o, is evidently derived from the Misqually word for wolf, stk-ai-o, probably because it looked more like that animal than any other which they knew. So some of the tribes east of the Cascade mountains named the horse after the dog. This same word, Steakeo, is used by the Chehalis Indians and all the Indians on the Sound, except the Hakehs and the almost extinct Chemakums. The plurals, however, vary in the various languages. I presume from the derivation of the word that the animal was first known to the tribes speaking the Misqually language, perhaps coming across the Cascade mountains from the Klikitat Indians, and that these tribes introduced them to the other tribes.