FISHING AND SEALING

FISHING

Fishing was the principal economic pursuit of the Chinook, providing a plentiful supply of food both for consumption and for trade. The salmon was by far the most important fish but other species figured very prominently. Sturgeon (*Acipenser transmontanus*), a much favored fish, was doubly important because a single catch provided a huge supply of food. The steelhead trout (*Salmo gairdneri*), classed with the salmon by the natives, was taken in large numbers. The candlefish or eulachon (*Thaleichthys pacificus*) and the smelt (*Spirinchus thaleichthys* ?) were in great demand for the oil they produced. The California herring (*Clupea pallasii*) and the California sardine (*Sardinia caerulea*), which were very abundant, were taken in great quantities with the herring rake.

Though the Pacific ocean formed the entire western boundary of the Chinook, little or no ocean fishing was done.[1] Willapa Bay and the Columbia river furnished far better fishing grounds; they were more productive, more accessible and less dangerous. The river was unsurpassed for salmon fishing; the bay produced a large percentage of the shellfish which formed so important a part of the economy. Sturgeon, candlefish, and herring were obtained with equal facility in either body of water.

Five species of salmon (*Oncorhynchus*) enter the Columbia river for spawning. The largest and most valuable is the chinook or king salmon (*O. tschawytscha*). The average weight is twenty-two pounds but the maximum size exceeds a hundred pounds. The flesh is commonly a deep red though sometimes it is white. Three runs occur in the Columbia: the first from January to March; the second and choicest, from May till early July; the last beginning in late July and continuing until early October. The blueback or sockeye salmon (*O. nerka*) enters the Columbia with the spring run of Chinook. This is a much smaller fish, averaging about five pounds and not exceeding twelve. The silver or coho salmon (*O. kisutch*) is not much larger on the average but sometimes reaches a weight of thirty pounds. This species runs from July until November but does not long remain near the mouth of the river. The humpback salmon (*O. gorbuscha*) is the smallest species, weighing from three to eleven pounds with an average of four pounds. This fish is not very abundant in the Columbia. The dog or chum salmon (*O. keta*) averages eight pounds in weight but attains a maximum of twice that. The run is late, occurring from middle August until late in November.

Steelhead trout are found in the Columbia river in greater abundance than anywhere else in their range. The flesh is of excellent quality and the size of the fish recommends it, the average being above ten pounds and the maximum about forty-five pounds.[2]

The most productive method of salmon fishing used by the Chinook was that using the sieve net (Plate 4). The nets were woven of twine made of imported nettle

[1]But cf. Franchere, p. 245 f.
[2]Cobb, pp. 6-11, 25.

(*Urtica lyallii*), Indian hemp, or spruce root fiber. These seines were straight webs using stick type floats of cedar and round stone weights of about one pound each. The latter were grooved and attached with twisted withes of cedar woven to the base-rope of the net. Seines were sometimes of huge size, varying from one to six hundred feet in length and from seven to sixteen feet in width. A small seine was operated by three men. At high water, just before the tide began to ebb, two of the fishermen coiled the net into a frame which rested on the gunwales at the stern of the canoe. They then paddled upstream, staying near the shore where the current was not strong. At a selected point the canoemen threw a towline, with a wooden float attached, to the third fisherman who was stationed at the proper point on shore. The canoemen now paddled quickly into the current of the stream, amplified by the ebbing tide, and let out the net as they moved along. When all the net was out the attached towline was fastened to the canoe and the fishermen paddled ashore. During this procedure the canoe drifted downstream about an eighth of a mile, the man on shore walking apace while carrying the towline he had received. The three fishermen, all now on shore, carefully hauled in the seine taking care that none of the ensnared fish could jump over before being clubbed. Considerable skill was required to accomplish this. An exceptional haul brought in a hundred fish; an average was perhaps forty. The larger seines required more than three men to handle them.[3]

Salmon were also taken with a conical bag net carried between two canoes. More commonly, however, this type of net was used for sturgeon. They were designed to take but one of these huge fish at a time. At the lower end or point of the bag a lure was often attached, consisting of some bright object such as a bunch of feathers. A small straight web was also used for sturgeon.

A second method of taking salmon utilized dams or weirs across the small streams emptying into the Columbia. When dams were used they were built diagonally across the stream and consisted of rocks, brush, and earth. In the larger streams weirs were placed straight across. Stakes driven in the stream bed provided support for removable weir fencing woven of small willow withes. If the stream were used for transportation a canoe gate was provided in the form of a moveable section. With dams and weirs small auxiliary traps were sometimes used but more often the impediment merely served to concentrate the fish so that they might more easily be taken with dip nets or spear. Spear staging was occasionally built in connection with the weir but more often the spearing was done from the banks or by wading in.

Spearing salmon from canoes was a third important means of obtaining these fish. The canoe was allowed to drift downstream while the fisherman watched intently for the salmon. The spear he used was either single or double pronged, the latter more commonly.

The two-pronged spear consisted of a fir shaft fourteen to eighteen feet in length to which were fastened the diverging foreshafts which held the points. Each foreshaft was about twelve inches long. The three pieces were bevelled at the point of juncture so that the proper angles would result when the parts were bound together with spruce root wrappings and pitch. Each point consisted of three parts, a flat-

[3]Swan, pp. 104-107. Cf. Coues, p. 753; Dunn, p. 138; Douglas, p. 269.

tened point of elk bone or hardwood and two butt barbs of elk horn. The point and barbs were bevelled, fitted together, and made secure by careful wrapping fixed with pitch. The butt formed by the barbs contained a cupped socket which fitted the tapered end of the foreshaft. From the point to the main shaft loosely hung a strong cord made fast at either end. The single pointed spear was identical except that no foreshaft was required; the point fitted the tapered end of the main shaft.

The spear was thrust, not thrown. When a fish was speared the points came loose from the foreshafts but remained attached to the main shaft by the cords. The fish was then played by manipulating the shaft.[4]

Still another method of taking salmon was through the use of dip nets and staging. In the spring before the river level rose channels were dug near the shore. These were made of proper width and depth to accommodate a dip net. A staging was then erected and made variable in height so that it might be adjusted to changes in water level. The edge of the staging was aligned with the inner edge of the channel. When the water filled the channel and the fish began to swim through, the fisherman stood on the staging and carried his dip net the length of the channel, moving it with the current. The dip net consisted of a circular hoop of vine maple (*Acer circinatum*) attached to a handle of fir from twelve to fifteen feet in length. The bag was woven of Indian hemp cord.[5] The vertical dip net was also used.

Line and hook fishing was used most commonly for sturgeon (in addition to seining, described above). The hook was made of hardwood in two pieces bound together with string and pitch so that an acute-angled, V-shaped implement was produced. The line was fastened to one extremity; the opposite one, which was turned slightly inward and sharpened, served both as point and barb. The line permanently fastened to the hook was short; in use it was tied to another line of the required length. This was quite heavy when used for sturgeon and of a strong fiber such as spruce root or cedar bark.[6] Hooks, and also nets, were rubbed with wild celery root to attract the fish.

Swan furnishes a graphic account of sturgeon fishing:

> As soon as the sturgeon feels the hook, away he starts like an arrow, and the canoe goes whizzing and spinning along at a fearful rate, and requires a good deal of dexterous management to prevent being turned over. As the fish slackens speed, the Indian hauls in the line, and by perseverance at last tires the fish so that it is hauled to the surface of the water, and stunned by a blow on the head or nose with a heavy club carried for the purpose. The trouble now is to get the sturgeon into the canoe, for sometimes these fish weigh from three to four hundred pounds,[7] and are from twelve to fifteen feet long. The Indian contrives to get the sturgeon's head over the gunwhale of the canoe, and with a peculiar twist suddenly jerks the fish in without any apparent difficulty. . . . Sometimes an Indian will catch two or three great sturgeon during one tide, for they generally begin to fish as the tide begins to flood, when the sturgeon follow up in the shoal water to feed. . . . The Indians prefer them to salmon, but it is much more difficult to take them.[8]

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[4]Cf. Swan, pp. 38-40.

[5]Douglas, pp. 267 f.

[6]Cf. Dunn, pp. 134 f.; Thwaites, pp. 351 f.

[7]Swan is conservative in this estimate. The species found here (*Acipenser transmontanus*) is the largest of the sturgeons. Ross (p. 94) states that one brought to the trading post measured thirteen feet and nine inches in length and weighed 1,130 pounds. Douglas (p. 269) mentions four to five hundred pounds as average weights. Jordan's *Check List* (p. 34) gives the record size as nineteen hundred pounds; this fish was taken at Astoria.

[8]Swan, pp. 245 f.

Small fish were speared from the banks of streams or from canoes with multiple wooden spears used against the current.[9] Flatfish, such as the flounder (*Platichthys stellatus* ?) were caught by wading barefoot into the water and feeling them out with the feet. As soon as the fish was felt it was quickly stepped on, then grasped and thrown far on shore. The rough backs of the fish prevented them from slipping from under the feet. Fish caught in this manner sometimes weighed as much as twenty pounds. This method of fishing was looked upon as a sport and a laughing group usually participated.[10]

Smelt, eulachon, and herring were caught in a number of ways. The herring rake, presumably made with bone teeth, and the dip net were favorite methods.[11] Ross states that the eulachon "enters the river in immense shoals, in the spring of the year. The ulichans are generally an article of trade with the distant tribes, as they are caught only at the entrance of the large rivers. To prepare them for a distant market, they are laid side by side, head and tail alternately, and then a thread run through both extremities links them together, in which state they are dried, smoked, and sold by the fathom, hence they have obtained the name of fathom-fish."[12]

Despite the abundance of fresh fish, those which were cast dead upon the beach were used also. A native searching for such fish intimated to Clark that sturgeon might be obtained in this way.[13]

FIRST SALMON CEREMONY

The first salmon ceremony[14] was observed for the first of the Chinook salmon and a similar rite was held for the first sturgeon. The ritual treatment continued for several days. Mrs. Luscier was indefinite on this point but Ross places the duration at about ten days[15] while Gibbs states that the rules were abated with the ripening of the salmon berries.[16]

The fisherman obtaining the first salmon immediately sent messengers to notify all of the villagers of the event. The latter gathered immediately at the house of the fisherman; it was he who acted as ritualist. In the meantime sand had been placed in the mouth of the salmon, as soon as it was brought to shore, in order to insure success in later fishing. When brought to the house the fish was cleaned by rubbing it with moss; under no circumstances was it washed with water.

Those assembled now decided how the fish was to be cooked. If it were to be boiled it was broken into pieces with the hands; a knife was never used. The head and tail were broken from the body, then the body was broken open so that the heart might be removed. This was thrown immediately into the fire. The eyes were removed and swallowed whole, "to avoid bad luck in the future." The same was

[9]Dunn, p. 139.
[10]Swan, p. 83.
[11]Cf. Boas, *Chinook Texts*, p. 231.
[12]Ross, pp. 94 f.
[13]Thwaites, vol. 3, p. 276.
[14]See Gunther, *Analysis of the First Salmon Ceremony; A Further Analysis.*
[15]Ross, p. 97.
[16]Gibbs, *Tribes of Western Washington*, p. 196.

done with the point of the nose. The intestines were not removed, but all parts were now placed in an oblong container of alder and boiled.

If the salmon were roasted it was cut lengthwise down the back with a mussel shell knife. The backbone and intestines were removed, together with the heart, and carefully placed in the fire. The head and tail remained attached to the body. The fish was then roasted in the usual manner, except that only alder wood was used for the fire. When cooked the fish was broken apart and a portion given to all present, including the children and the fisherman. Girls near puberty were not allowed to partake, but neither were they permitted to attend the ceremony.

The greatest care was taken to ensure that the fish be cut only lengthwise, never crosswise; and to ascertain that proper disposition was made of the heart. The breach of these rules would have been the most serious possible, in the second case "especially if a dog got hold of the heart."

Every morsel of the fish was eaten. Care was taken that the head be eaten from the nose toward the back, never in the opposite direction. Also, no part was allowed to remain uneaten after sunset. Even though many fish were caught during the day, all were consumed before sundown.

When the salmon was boiled a soup remained; especially rich since the fish had been broken up. This was eagerly drunk from spoons of horn, bone or shell. The eyes and nose part of the salmon to be roasted were eaten in the same way as with the salmon for boiling. If any vestige of the bones remained in the fire they were carefully buried.

The strength of these beliefs is indicated by the fact that early white traders were unable to obtain salmon from the natives in the early spring before solemnly promising not to cut it crosswise and to consume all they received each day before sunset. To insure proper treatment of the heart it was removed before transferring the fish.

The account above, furnished by Mrs. Luscier, differs in some respects from statements found in the early literature. Often it is stated that the first salmon must invariably be roasted. This was perhaps the result of instructions received from the natives when first fish were presented to them. Roasting was simple; the procedure in the boiling process was more complicated and involved non-removal of the intestines. Gibbs states that the heart was roasted; this statement is doubtless based on his having seen the heart placed in the fire. He adds that particular parts were eaten with the rise and fall of the tide; that the first salmon was eaten by a shaman, the second by the household; and that dancing accompanied the ceremony. Swan corroborates the dance feature but states that it had been discontinued in his time. Mrs. Luscier denied that any dancing accompanied the ceremony. It is doubtful that the first was eaten only by a shaman.[17]

The first fish caught by a boy was never eaten by him but always given to others, though not necessarily to old persons.

If salmon berries (yι'tœwa') were abundant in the spring it was thought to insure a plentiful supply of salmon.

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[17]Ross, p. 97; Gibbs, *loc. cit.*; Swan, pp. 107 f.; Dunn, p. 121; Lee and Frost, pp. 300 f.; Franchere, pp. 260 f.

SHELL-FISHING

The wide expanses of tide flats exposed with each ebb tide in Willapa Bay constituted a shell-fish grounds hard to surpass. Full advantage of the resource was taken by the Chinook, both for the satisfaction of immediate needs, for storage, and for trade.

In addition to the usual varieties of shell-fish available along the north Pacific coast, the bay produced the native oyster (*Ostrea lurida expansa*) in large quantities. This is, however, a small oyster (about an inch in diameter) and was less favored by the natives than the clams, some of which attain huge size. The giant panope (*Panope generosa*) or geoduck, for example, reaches seven or eight inches in shell length, and the mud clam (*Mactra catilliformis*) is scarcely smaller. But the cockles (*Cardium corbis* and others) were perhaps of greatest importance, with the macoma (*Macoma nasuta* and others), the hard-shelled clam (*Venerupis staminea*) and the razor clam (*Solen sicarius* and *Siliqua patula*) all playing important roles.

Clams were dug by removing the sand covering with the hands or by the use of large wooden digging sticks with tapered points and cupped blades (Figure 13, A, B). These varied in length from two feet to more than four feet.

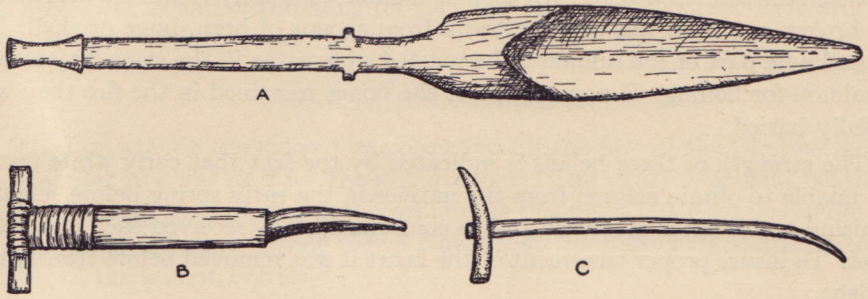

FIG. 13. Digging sticks. (A) For shell-fish, large (after Field Museum specimen 19099); (B) For shell-fish, small (compare Field Museum specimen 19814); (C) For root digging.

Swan furnishes a description of the methods of cooking and drying clams. The mud clam (also geoduck and others ?) "is opened with a knife, and the clams stuck on skewers holding about two dozen; these are then washed clean, drained, and dried in smoke. The *clolum* [hard shell clam] is opened by being heaped on stones previously heated, then covered with sea weed and mats. The water contained in the clam runs down on the hot stones, causing steam which . . . soon cooks the whole pile, containing usually from ten to twenty bushels. From twenty minutes to three-quarters of an hour are generally occupied in performing the operation, and the coverings are then removed. The shells, now being opened, are easily separated, and the meat stuck on skewers . . . and dried in the smoke. These dried clams are a great article of trade with the Indians of the interior, and quantities are annually carried from Shoal-water [Willapa] Bay up the Columbia."[18]

[18]Swan, pp. 85 f.

Mussels (*Mytrilus edulis*, *M. californianus*, and others) were collected though not in quantity to compare with the clams. Barnacles were plentiful but were not eaten. A small crab was gathered in large numbers to be boiled and eaten, shells and all.[19]

But more important was the large crab which was abundant in spring and early summer. The shell was broken off and only the claw part retained.[20]

SEALING AND WHALING

Sea mammals of several species were utilized by the Chinook for both food and clothing. The availability of these animals must not be judged in terms of conditions today when most of the species are almost extinct. So far as the Chinook were concerned the supply was literally inexhaustible.

The fur seal (*Callorhinus alascensis*) was found off the coast during its migrant season from December until spring. Male and female varied greatly in size; the former weighing five hundred to seven hundred pounds but the female only one-fifth as much. The huge Steller's sea lion (*Eumetopias jubata*) appeared not only on the rocks of the coast but also in the Columbia river for the entire length of Lower Chinook territory. The sea lion is a highly social animal and congregates in large numbers. Males weigh fifteen hundred to two thousand pounds, the females about half as much. The California sea lion (*Zalophus californianus*) is considerably smaller, the bulls not exceeding one thousand pounds. These are (and were?) less common off Chinook territory than the Steller's species. The hair seal (*Phoca richardii richardii*) was one of the most important of the aquatic mammals for the Chinook. They were found basking on the beaches, sometimes in small groups but not in colonies. Males and females were of about the same size, varying in weight between sixty and one hundred pounds. They were found far up the Columbia and because of their smaller size were of course much more easily taken than the large seals.[21]

We turn again to Swan for our best description of hunting the hair seal:

> The staff of the spear was about twenty feet long, made of fir or yew. The head of the spear, made like a salmon spear, but larger, was attached to a line thirty fathoms long. . . . [The native would] proceed to some sand island to the leeward of the seals, who are always, at low tide, seen basking in the sun, particularly in the spring, when the young ones are about. Having fastened his canoe and divested himself of his clothes, with one end of the line fastened round his body, and the rest coiled up on his left arm, he goes into the water, with the spear firmly grasped in his right hand, and floating just under the surface of the water. No part of his person, except the face and top of his head, could be seen, and the hair floating round made him look very much like a seal. Cautiously and slowly he gets between the seal and the deep water; then wading ashore, careful to keep his body submerged till he is near enough, he suddenly rises up, and, darting his spear into the body of the animal, runs back on the sand, and setting his heels firmly, braces himself for the contest. He lets but little line out at first, and if he is the strongest, easily gains the mastery. But with a large old male a fierce battle ensues, and it is sometimes attended with the loss of the line; but generally the old fellow comes out victorious. When the animal is dead the first thing is to

[19]Swan, pp. 86 f.
[20]Swan, p. 82.
[21]Bailey, pp. 330-36.

stop up the spear-hole with a wooden plug, or a bunch of grass or fern, which is always carried in the canoe for the purpose. . . .

As soon as the animal was brought ashore, the following process was invariably adopted. A couple of round logs, eight or ten inches in diameter, were laid parallel to each other, a foot or two apart, and between them kindled a brisk fire of dry chips. The seal is then laid across the logs over the blaze, and, commencing at the nose, the whole body is rolled over and over till all the hair is thoroughly singed off. The skin, which is by this process pretty well roasted, is scraped clean with a shell or knife. The blubber is next cut off in strips, which are boiled in water, and oil skimmed off with shells. After it has settled and cooled, it is poured into a bottle (as they call it), made of the paunch of the animal blown up like a bladder, and dried. In every lodge may be seen these bladder-like bottles, and the more an Indian has the greater his wealth. The meat, which is dark, is boiled with the blood, which they are particular to save, and, when cooked, is tender, and not very unpalatable. . . . The oil is eaten freely with all their food, and, when freshly boiled, is as sweet and free from fishy flavor as lard.[22]

The sea otter (*Enhydra lutris nereis*) furnished the Chinook with many fine robes and blankets. The animals are highly gregarious and formerly were very abundant and easily caught because of their timidity. They were found only in and near the salt water. The length of the male is five or six feet, the weight fifty to seventy-five pounds.[23] All of the early writers speak of sea otter robes in use by the Chinook but it is not certain whether they used the flesh for food or not.

The whale was greatly valued by the Chinook and highly formal regulations for the disposal of a stranded animal were enforced.[24] Yet it is not definitely known whether any but dead and stranded whales were taken. A statement by Clark, writing at Fort Clatsop, is quite ambiguous: "The whale is sometimes pursued, harpooned, and taken by the Indians of this coast; though I believe it is much more frequently killed by running on the rocks of the coast to S. S. W. in violent storms, and thrown on different parts of the coast by the winds and tide. In either case the Indians preserve and eat the blubber and oil. . . ."[25] It may have been that Clark had heard of whaling by the Quinault, and that the expression "this coast" was intended in a very general sense; yet the reference in the same sentence to "the rocks of the coast to S. S. W." is suggestive.[26] In any event there was a number of species to be found in considerable abundance off the mouth of the Columbia. The California gray whale (*Rhachianectes glaucus*) was estimated to have numbered thirty to forty thousand on the southern California coast in the winters of 1853 to 1856. These same individuals migrated to the northern waters in the summers. The male of the California whale reaches forty-four feet in length. The Pollack whale (*Balaenoptera borealis*) was likewise common. It is somewhat larger than the preceding species. The Pacific humpback whale (*Megaptera versabilis*) was once quite abundant. The male measures about fifty feet in length. The valuable sperm whale (*Physeter catodon*) was doubtless cast up on the beach occasionally. Other whales were known to the vicinity but were relatively uncommon.[27]

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[22]Swan, pp. 84 f., 83 f.
[23]Bailey, pp. 302-305.
[24]See class and rank.
[25]Thwaites, vol. 4, p. 161.
[26]These remarks of Lewis and Clark may be significant: "On these hats they work various figures. . . . These figures are faint representations of whales, the canoes, and harpooners striking them." (Thwaites, vol. 4, p. 24.)
[27]Bailey, pp. 336-45.

Boas records a number of customs and tabus associated with the whale: When the Clatsop found a whale its discoverers indicated their claim by tying straps or kelp to the animal; then others were called but they did not cut where the straps had been placed. Those who came last received the lower side of the animal. Portions removed were not recut (immediately?). If a drifting whale were seen by a menstruating woman, a murderer, or one who had cohabited the preceding night, it drifted out to sea again. But one who had cohabited might paddle his canoe to the seaward of the whale and prevent it from drifting away.

"When the people are starving, a person who has a supernatural helper of the sea sings to bring a whale. No woman who has her regular menses enters, and no young man; else a person might see the singing who has cohabited the preceding night. Therefore, also, no woman must enter, as she might become menstruant in the house where they sing. Only old people, boys, and young girls help sing. For five days he sings. Then a youth is sent and told to look seaward. Five times he is sent; then, indeed, he finds a whale adrift. When a man who has cohabited the preceding night enters the house in which the singing goes on, the supernatural helper vanishes at once. Thus also when a menstruant woman enters. The singer is covered with down. He places a pole upright on the beach and says: 'Here a whale will drift ashore,' and, indeed, it drifts ashore there after he has sung five days."[28]

Many species of dolphin and porpoise occur in Chinook waters but most important to the natives were the striped porpoise (*Lagenorhynchus obliquidens*) and the Pacific killer (*Orcinus rectipinna*). Lewis and Clark comment: "The porpoise is common on this coast and as far up the river as the water is brackish. The Indians gig [spear] them and always eat the flesh of this fish when they can procure it. . . ."[29]

[28]Boas, *Chinook Texts*, pp. 262 f.
[29]Thwaites, vol. 4, p. 163.