THE KWAKIUTL - Part I

GENERAL DESCRIPTION

IN its broadest application the term Kwakiutl is used to designate a large number of cognate tribes on the coast of British Columbia between the fiftieth and the fifty-fourth parallels, the most northerly being the Haisla at the head of Douglas channel, and the most southerly the Lekwiltok at Cape Mudge and Campbell river. Properly speaking, it is the name of a group now resident at Fort-Rupert, and, more specifically, of a sub-tribe of that group.[1] These tribes compose one branch of the so-called Wakashan linguistic family; the other consisting of the Nootka tribes on the western coast of Vancouver island south of Cape Cook, and about Cape Flattery in the State of Washington.

In the south the Kwakiutl come in contact with the Salish of Vancouver island and the mainland north of Fraser river, while farther north an isolated Salish group, the Bellacoola, juts down to salt water in the midst of Kwakiutl territory, occupying Dean channel and Bentinck arm. In the extreme north the Kwakiutl are neighbors of the Tsimshian tribes and of the Haida of Queen Charlotte islands. Intercourse with the inland Athapascan tribes is prevented by mountain barriers.

The physical characteristics of the region are remarkable. Innumerable fiords cut deeply into the mainland. For the greater part their shores are steep and rocky, even mountainous; but here and there, usually at the mouth of a stream, is enough low, level land for a village site. In the fiords and off the mainland coast are countless islands, all rocky and clothed in evergreen forests, and separated by narrow, intricate channels of deep, clear water. On such islands are many of the Kwakiutl villages. Close to the mainland, from northwest to southeast, Vancouver island stretches its two-hundred-mile length, protecting the smaller islands from heavy storms and rendering the channels safe for canoes. North of this sheltering land mass the winds from the open Pacific sweep unchecked into Queen Charlotte sound and up into Hecate strait, but the natives find safe passage in the narrow wa-

1 The Anglicized form Kwakiutl will be used in the broader sense, referring to all the tribes of this family, and the native form Qágyuhl will apply to the Fort Rupert tribe, or, as occasion requires, to the sept.

terways behind the small islands that skirt the shore. Less fortunate are those about the unsheltered northern end of Vancouver island, who in rough weather must either remain ashore or restrict their movements to the quiet waters of their home bay or inlet. On the mainland, as on Vancouver island, the mountains come close to the sea, and with few exceptions the inhabitants are inevitably marine people.

It is an inhospitable country, with its forbidding, rock-bound coasts, its dark, tangled, mysterious forests, its beetling mountains, its long, gloomy season of rains and fogs. No less inhospitable, mysterious, and gloomy, to the casual observer, is the character of the inhabitants. They seem constantly lost in dark broodings, and it is only after long acquaintance and the rather tedious process of gaining their confidence that one discovers an uncertain thread of cheerfulness interwoven in the sombre fabric of their nature. Even then one is impelled to question their knowledge of any such thing as spiritual exaltation or mental pleasure except such as may be aroused by the gratification of savage passions or purely physical instincts. Chastity, genuine, self-sacrificing friendship, even the inviolability of a guest, — a cardinal principle among most Indian tribes, — are unknown. It is scarcely exaggeration to say that no single noble trait redeems the Kwakiutl character.

Of medium stature, the Kwakiutl are as a rule well formed and strongly built. The face is very characteristic, being usually high and with a prominent, frequently hooked, nose not found among any other North Pacific tribes. Head-flattening was an invariable practice, and most of the elderly people now living have artificially lengthened heads.

Until comparatively recent times the universal garment for both sexes was a scarcely ankle-length robe of woven cedar-bark or of fur, worn as a rule about both shoulders and tied at the throat, the edges hanging unconfined. Men sometimes carried the robe in a roll thrown across the shoulder, or wore it wrapped about the waist with the upper corners tucked in under the roll. At work, men and women fastened the robe at one side so as to leave either shoulder and arm free, while a girdle of cedar withes or woven goat-hair yarn held it at the waist. Still in use, though its significance, once literal, long ago became figurative, is the expression *wusíhyitaikya* ("gird yourself" — get ready for work). Not infrequently men worked stark naked on the beach or in the village streets. Women however, outside the comparative privacy of the family, were never seen without the robe, except in performing certain dances of the winter ceremony. Furthermore they

always wore a narrow, knee-length apron of cedar-bark fringe or goat-hair cords pendent from a girdle of the same material.

Fur robes, which were used only by the upper class, were made of the skins of such animals as mink, marten, raccoon, marmot, beaver, sea-otter, and black bear. Sea-otter skins, which were reserved for persons of the very highest rank, were the only fur used by women. Only in exceptionally cold weather was the fur worn next the body. A garment of marten-skin was expensive, and could not be purchased without a partial payment of a slave. The mink-skin or marten-skin robe consisted of three rows of pelts, each row containing seven or eight skins arranged side by side. The four skins at the neck of the garment were unsplit, so that they formed a ruff with fur on both sides, and the tails hung free. Marmot-skins were highly valued because the fur is full and soft, and, though the animals were numerous in the mountains, the season of prime fur is short.

A seamless, waterproof cape of woven cedar-bark with a fur-edged opening for the head was worn in rainy weather; and as a shield from rain and excessive heat both sexes still sometimes use a hat woven from twisted strips of cedar-bark. The cylindrical crown and the broad, drooping rim lack the painted designs of the "chief's hat" (*gyikumhl*), which is covered with conventional figures of the wearer's ancestral crest and, perhaps, of his personal vision spirits. This, finely woven, spruce-root hat was borrowed from the Haida about the year 1860.

Moccasins were worn only in very cold weather. They were made of single pieces of deerskin or mountain-goat skin, and worn with the hair inside. Hip-length leggings of woven cedar-bark were worn by men of the Haisla and the Bellabella when travelling through deep snow in the woods.

Men had the hair thrown back from the forehead and hanging down the back. At the nape of the neck it was tied, sometimes with a braid of a sweet-smelling grass, and below this it hung loosely. The present custom is to cut it short. Some remove the beard, others permit it to grow. Most men have little hair on the face, but not a few have a considerable growth. As a bit of ornamental dress the entire unslit skin of a mink or a marten was worn as a head-band, the tail and the head meeting behind.

The hair of women, parted in the middle down to the nape of the neck, hangs in two braids in front of the shoulders, the ends being tied with fragrant grass or with goat-hair yam.

Young dandies of the Quatsino Sound tribes brought the hair around from the sides, tied the two strands over the forehead, put a sprig of cedar through the nasal septum, and turned the cedar-bark robe with the opening at the back; and so, holding the edges together with the hands behind the back, they would strut about, singing love-songs in order to excite the admiration of the girls.

The most valued ornaments of the wealthy class were ear-pendants and nose-rings of abalone-shell. The former varied in size from a small, square bit no larger than a thumbnail to a great piece as broad as a man's hand; while the nasal ornament was a circular ring with a narrow opening that permitted it to pass over the septum of the nose, which was not always pierced. The largest pendants, too heavy to be supported by the ears, were tied to the hair-braids. As the abalone-shells, of British Columbia are thin, fragile, and of inferior lustre, they are not suitable for this use. Respecting the source of these comparatively rare ornaments, it is related that about 1840 Tsimshian man[2] sailed to Oahu, Hawaii, aboard a trading ship on which he frequently had served as pilot. When he returned he brought several boxes of large abalone-shells, which he sold among the northern tribes, whence many of them were obtained by the Kwakiutl.

Bracelets, anklets, and necklaces consisted of rows of dentalium shells sewn on deerskin. Bands woven from mountain-goat hair by means of a set of interlacing teeth cut into two pieces of yew were worn by females from infancy, in order to keep the feet small. Woollen strips are now generally used for this purpose.

Tattooing was not general. It was performed usually on the arm in memory of one's lover, and commonly took the form of one's family crest. a bone splinter and charcoal of tules were used in the operation.

The superstructure of a Kwakiutl house is supported by heavy cedar posts. In the notched tops of the hewn side posts, usually six in number, rest two eaves-timbers extending from the rear to the front. Another hewn post supports the ends of the gable timbers in the rear wall, and two others perform a similar service at the sides of the door in the front wall. The eaves-timbers are a hand-breadth in thickness and about twenty inches in width. The front end of the ridge-timber

2 Father-in-law of a subsequent Hudson's Bay Company employs at Fort Rupert, and grandfather of the informant.

rests on a heavy cross-piece connecting the tops of two massive columns, while the rear end is supported directly by a single post. These three interior posts stand well inside the front and rear lines of the house. From ridge to eaves extend numerous rafters, which are crossed by a series of battens. The roof-boards extend in the direction of the rafters, and formerly were slightly guttered and applied like tile. They are held down only by their own weight, or, in stormy weather, by the addition of heavy stones; being left unfastened in order that they may easily be removed by means of a pole to permit the escape of smoke.

Far less common than the type just described is that in which two ridge-timbers a considerable distance apart are supported on two cross-timbers, each of which rests on two interior posts, one pair at the back, the other at the front of the structure. In 1865 an informant saw this type among the Koeksotenok, but not elsewhere. The two ridge-timbers sometimes rest directly on the upright columns. The same man saw two houses in which the ridge-timber was supported by two columns. In one house, which came in marriage from the Bellabella to the Kueha gens Yaaíhhyakami, the rear post was carved in the likeness of a man, and the front post was a thunderbird, between whose legs was the door. The other house, which belonged to the Kueha gens Háaiyalikyawi, was similar, but the door-post was a raven.

The ridge-pole is probably of recent introduction, as the engravings in Vancouver's journal depict all the houses with roof sloping from front to back, and with horizontal wall-boards.

Some of the Quatsino Sound houses have stringers extending from one eaves-timber to the other, on which are short posts helping to support the ridge.

The lower ends of the perpendicular wall-boards are set in a trench, the tops in a groove in the lower edge of the eaves-timber. Formerly they were rived from large cedar logs, and it is still easy to find houses consisting almost entirely of native-made boards. They are now held in place by nails, but the primitive means were cedar withes passing through holes in the boards and binding them to horizontal battens.

The poorer class laid the wall-boards horizontally and secured them with cedar withes between pairs of upright poles. Not a few houses are now constructed throughout of mill lumber.

A striking feature of almost every building of the old style is the grotesque carving of the interior posts to represent mythical beasts and birds. As late as 1865 houses with carved posts were by no means

numerous, and the original of each was believed to have been given by some supernatural being to an ancient ancestor of the family. Carved posts have become increasingly common, the authority to make use of some certain house-frame being one of the most valued rights transferred in marriage.

Many of the modern houses of primitive type have huge dimensions, considering the status of the builders. In the unfinished house of Nukápnkyim at Fort Rupert the corner posts are forty inches thick, twenty feet high, twenty-one feet apart laterally, and seventy-seven feet from front to rear. The eaves-timbers are three feet thick at the butts, which rest on the rear posts, and eighty-five feet long, projecting considerably beyond the corner posts. Until the middle of the nineteenth century Kwakiutl houses were very much smaller than this, the largest not exceeding perhaps thirty feet in depth and width, six or seven feet in height at the eaves, and nine feet at the ridge; while the seven upright posts were not more than twelve inches in diameter. The ponderous roof-timbers of today are raised by means of a cribwork of logs gradually built up beneath the balanced beam.

The principal door is in the middle of the front wall, a smaller one opening through the rear directly upon the adjacent forest.

All about the room extends a low platform of earth covered with boards, on which the guests sit. The house is apportioned among several related families, each of which maintains its own fire and kitchen devices. Beside each fire is a massive settee resting flat on the earthen floor, its sloping back bearing carved representations of fabulous creatures. The position of honor, as in the Plains tipi, is at the back of the room behind the principal fire. In the fantastically figurative thought of the Kwakiutl the house is represented as a face with the door a great mouth ready to swallow the guests of the master.[3]

When a man is about to build a new house, he reveals his intention at some public gathering, and requests certain gentile chiefs to bring the timbers which, by inherited custom, it is their exclusive right to provide. Every step in the undertaking is accompanied by a feast and a distribution of presents to workers and spectators. When the materials are brought in, when they are moved from beach to building site,

3 In this volume all references to right and left in the house are made to conform with this conception.

when a post or one end of a timber is raised, in short, whenever any single portion of the work is accomplished, there follows a feast, and no more labor is performed on that day. He must be a very rich man who can finish a house within four years. When at length the house is complete, the tribe is invited to a feast and distribution, an occasion which, in allusion to the great blazing fire in the centre of the room, is figuratively called "drying the house." Later there may occur a second drying of the house, to which all the tribes are invited. Only a man of very high rank can erect a dwelling in this ostentatious manner, and generally he finds himself overwhelmed with debts. On account of the great additional expense a winter dance very seldom celebrates the completion of a house.

The members of the household commonly sleep on the floor near the fire, or on the platform. In some of the Kwakiutl tribes the homes of the upper class had a number of small private bedrooms, exactly like a fairly commodious kennel, raised on scaffolds above the floor. These were most frequently the possessions of young men and young women. Other tribes had, and still have, such bedrooms resting on the floor, so that in cold weather they may be carried close to the fire. Not infrequently the eldest daughter of a family of rank, especially before marriage, had in one of the rear corners a private room walled off from the common quarters. Here she would spend much of her time in proud seclusion.

Most of the Kwakiutl villages stand on the grassy terrace just above the beach gravel of some sheltered cove, with the tangled forest directly behind. Overlooking the water, the inhabitants were with difficulty surprised by an enemy; but if perchance a sudden attack were made, they could flee through the rear of the houses into the thicket and lie hidden while the raiders pillaged and burned. Nearly every village had a fortified refuge at the top of an inaccessible, rocky hill (in many cases an islet), where the inhabitants could dwell in comparative security during the "fighting season," that is, from about the middle of August until the first of October, when, the water being smooth and the weather usually foggy, conditions were most favorable for war-parties. These forts were occupied only when there was reason to be apprehensive of attack. Thus, a stranger in the village was usually regarded as a spy, and his departure was apt to be followed by a movement to the fort. Conspicuous in every village are the platforms that overlook the beach, with the back resting on a log bulkhead at the

edge of the terrace, and the front and sides supported on a framework of posts. Here, especially in the late winter morning after breakfast, the blanketed men lazily sun and air themselves, reclining against the sloping back-rest that surrounds the platform, occasionally conversing in low tones but for the greater part brooding in silence.

Of all the arts and industries practised by the Kwakiutl tribes none reached a higher development than the art of working in wood. The principal phase of this work — the riving of cedar planks — has become obsolete because the necessity that mothered the art no longer exists; but splendid canoes, serviceable, water-tight chests, ponderous feasting dishes, ingenious masks, and a host of indispensable utensils are daily manufactured with the most elementary tools.

In primitive times, and indeed for many years after axes were available, the tree was felled by making two very gradually converging cuts about thirty inches apart and splitting off a succession of slabs, or heavy chips, as the cutting progressed. The tools were a spool-shaped stone maul which fitted the hand, and a stone-edged (later iron-edged) chisel of tough yew protected at the head by a wrapping of cedar withe. To prevent its breaking, the stone cutting-edge was dipped frequently in water. Fire was often used to aid in this work, but even so a man required eight to twelve days to fell a large tree, that is, one of a diameter of at least three feet.

If boards were to be made, a log three fathoms and three spans (about fifteen feet) in length was cut off squarely by means of fire and chisel. a span and four finger-breadths below the upper edge a horizontal line was marked across the squared face, and along this line a rather blunt-edged instrument of horn or bone was used to start the cleavage. Seven yew wedges, graduated in length from about nine to twenty-four inches, were now carefully driven in, the longest wedge being near the left edge of the log and all pointing to the left at an angle of forty-five degrees. Then the workman gave each successive wedge a tap, slowly forcing them in and splitting off a two-inch plank. The heart of the log was seldom sound enough to be used. The board was then smoothed on both sides by means of the adze, an instrument consisting of a trapeziform handle of maple or apple wood to which was lashed on one of the parallel sides the blunt end of a strip of bone (later iron), the cutting edge protecting forward beyond the handle. As mentioned above, roof-boards were slightly hollowed out on one side, like roof-tile. In localities where the cedar was good, boards were made

for sale to people less fortunately situated.

Very rarely one finds in the dense forest a standing cedar from which generations ago boards have been split up to the heart, leaving only half the trunk. This was accomplished by two artisans, one who made the cut at the bottom and another who worked above the ground, supported by a climbing apparatus. This device is still used by gatherers of hemlock bast. Two strong ropes encircle tree and climber, one of them passing beneath his armpits and the other about his thighs, while a third holds against the rough bark a stout stick. His feet resting on the stick, the climber slowly works the ropes upward with a short pole and lifts himself to any desired height beneath the first branch. When he is ready to descend, he throws over the lowest branch the end of the rope by which he has drawn up his implements, lowers it to his companion, ties the other end beneath his arms, casts loose the other ropes, and is then lowered to the ground. Probably the Kwakiutl resorted to this method of obtaining boards when only a few were required, and a large portion of the labor of felling a tree and cutting off a log would have been wasted.

A standing tree from which boards have been split is called *ketsóq* ("begged from"), and it is said that, since trees are believed to have sentient life, the ancients before obtaining boards in this way would look upward to the tree and say: "We have come to beg a piece of you today. Please! We hope you will let us have a piece of you." The same request was made of a yew tree before cutting off a piece for making tools. But when a tree was to be cut down, it was "killed" without words. Sometimes one sees a great cedar with a circular hole about ten inches in diameter chiselled straight into the heart. This was done in order to test the soundness of the tree. Apparently little labor could have been saved by this procedure, and the purpose may have been to spare the tree, if it was unfit for boards, and let it stand to continue making bark.

The average width of boards was about two feet. An informant has seen a plank in his uncle's house having a width of one fathom and two spans (more than five feet), and the standard length of three fathoms and three spans. When a neighboring chief heard of this, he sent for it, paying a single Hudson's Bay blanket now worth fifty cents, then one dollar. Four men carried it by means of ropes passing through holes at the sides. So wide was it that the ends were reinforced with strips so that it would not be split by sagging.

Boards for the front wall of a chief's house were made with extreme care, being adzed to a thickness of three-eighths of an inch, and so nicely finished at the edges and sewn together with cedar withes as to seem a single piece. a section about eight feet square formed half of the front wall. As in everything else, there was considerable rivalry among the chiefs of various tribes in possessing the widest possible board. An ingenious but incredibly laborious method was to trim off the sap wood of a half log, hew it out carefully to the required thinness, invert the curving board over a pit filled with hot stones, and allow it to steam until its own weight flattened it. Battens were then sewn across the ends to prevent warping and splitting.

Canoe making is still a flourishing industry of the Kwakiutl, but no description of the process is here needed, inasmuch as it has been thoroughly treated in a previous volume.[4]

In a certain myth we find evidence that the first canoe was a log very slightly hollowed with fire and rudely tapered at the ends. But so unstable was it that a cedar-bark canoe was invented. A large sheet of bark was spread on the ground, and at each end for the width of three fingers the rough outer bark was scraped off. The sheet was then steamed over hot stones until it was pliable, and at each end the edge was puckered and tied. Thus was formed a craft with the rough bark inside. The next form evolved was a dugout with a low prow and a perpendicular cutwater. Some traditionists say that the stern of this model was cut square, others that it was like the prow.

Among the tribes of Quatsino sound there was in use as late as 1865 the *múnka, a* long, narrow craft, the shell of which was so thick that it could not be spread by heated water and steam. The stern was cut square and was very wide at the top, so that two men could sit on it side by side. The prow rose in some cases to a height of eight feet, spreading at the tip into two horn-like projections with a hooked beak at the front to represent an eagle. Sometimes the beak was omitted, and eagle-tails were carved on the sides of the prow. This prow piece, which was a heavy burden for two men, was laced to the hull, and against a head wind the rope stitches were cut and the prow was hauled aboard. The largest craft of this kind held twenty-five men, two on a thwart. This form of vessel was used by war-parties, and the high,

4 See Volume IX

wide prow afforded good protection.

When a canoe builder works steadily during the summer in order to finish, let us say, four canoes before the winter dance begins, he becomes very thin. It is said that the strong odor of the cedar, especially noticeable in a log that is moist inside, "fills him up," so that he eats only once a day, after returning home in the evening from the woods. Sometimes the exhalations arising from the heart of a moist cedar log make the eyes exude moisture.

In the frequent migrations of the people in pursuit of their seasonal occupations they transported not only a considerable cargo of food, clothing, and household utensils, but even a large portion of the house-timbers. The battens which cross the rafters were laid across the gunwales of two canoes placed side by side about ten feet apart, the ends of these timbers extending some four feet beyond the two outer gunwales. In many cases false gunwales five or six inches high were lashed to the canoes in order to raise the deck above the reach of ordinary waves. On the timbers were laid the wall-boards, running forward and aft and forming a commodious deck. A stone hearth was carried on extended voyages. All around the edge was built a wall of cedar storage chests, one tier high forward and at the sides, and two tiers high aft, and on these walls rested the roof-boards of the house. Usually the material of a single dwelling was used in making about four catamarans, which were managed by the different families occupying the house. Directly over each canoe, forward and aft, was left an opening in the wall in order to facilitate the passage of the crew in working the craft. A wealthy man would have, lying on the roof, a wooden "sail" about eight feet square, consisting of very thin cedar boards quite closely fitted and sewn together with cedar withes. Ordinarily this formed half of the front of his house. When the wind was fair, the "sail" was raised and propped up at an angle depending on the strength of the wind.

Poor people used either mat sails or small spruce or maple trees set upright between the deck-boards. The trees are said to have been more effective than the mats.

The double-canoe craft (*má'wa*, "carry all") made very good headway with a fair breeze. In the absence of a favoring wind recourse was had to what is claimed as a native device: an oarlock fashioned from a short section of a young cedar, hemlock, or yew, from which a stout branch extended at an acute angle. The end of the branch piece and the upper end of the main section were connected by stout cedar

withes, and then the main section was lashed to the gunwale. A pair of oarlocks were provided forward and another aft in each canoe. With four men at the oars in each of the two canoes, good progress was made in calm weather. Against a head wind everybody lent a hand either at the oars or with paddles.

The catamaran was steered by means of a long oar with a heavy, long cross-piece on the handle, held either in one of the after oarlocks or in a hole cut in the side at the stem. It carried two cedar-withe anchor-lines (*tátuwihohl,* "all, cedar-withe rope") thirty fathoms long. The anchor (*kúltsum*) long, rounded stone as heavy as one man could easily lift, and around the middle a groove was pecked so deep that the rope could not rub on the bottom and wear through.

When a heavy sea was encountered between anchorages or when they ran into tide-rips, it was necessary quickly to move the chests and take up the decking between the two canoes, in order that the choppy waves between the two keels might have free play; otherwise they would beat up against the boards, wash into the canoes, and soon fill them. Wrecks were frequent, the usual cause being the wearing out of the lashings of the deck supports. When this occurred, one end of a cross-timber would drop into the bottom of a canoe, and the sudden shift of weight would list the vessel until it shipped water. For such emergencies each craft had at least one small canoe as a consort, which usually was paddled by one of the women. In fair weather it was taken in tow.

In such places as were annually visited it was customary to have the usual substantial house-frame, and the work of setting up the walls and laying the roof was finished in less than a day. In other cases rude penthouses were thrown up.

Cedar chests are still made for various purposes, the edges being joined either with wooden pegs, or with a lacing of cedar-bark rope or of cedar withes passing through holes bored with a drill. Three of the angles present no seam, as the board out of which the four sides of the chest are made is simply scored across at the proper lines, steamed, and bent square; the ends being then laced together in a tight joint. In obtaining a close joint for the bottom of such boxes, the bottom edges of the sides are dusted with charcoal, and the bottom is pressed on. Any places where the charcoal shows on the bottom piece are too high, and are shaved down. When a perfect fit has been obtained, the edges of the bottom piece are smeared with tallow, eagle-down is dusted on

the tallow, and the bottom is pressed into place. Then holes, slanting outward, are drilled from the bottom across through the sides, and fir pins wet in the mouth are driven in. Boxes for the storing of blankets were sometimes made with dovetailed joints, and usually were carved and painted. But the Kwakiutl never produced carvings in the number nor of the quality of those fashioned by the more northerly tribes. Of the same form as the storage chest is the "grease tank," which until very recently was used for rendering and then for storing fish oil. Similar tanks were utilized in boiling food by means of heated stones. The water-pail and the drinking cup were made in the same manner as the chests, except that they had no cover.

Heavy feasting dishes, which sometimes attain huge dimensions, are fashioned out of solid alder in the likeness of some animal or creature of the imagination. More commonly such dishes are canoe-shaped, but many are round or square.

Another wooden utensil is the vessel formerly used in bathing infants. It was carved from a single piece of alder, and consisted of two round bowls side by side at the broader end of a canoe-shaped compartment. The child was washed first with diluted urine contained in one of the bowls, then was rinsed off with clear water from the other, and finally was dipped bodily in the large compartment.

The principal woodworking implements were these: the maul, a six-inch piece of stone pecked down until it fitted the hand, the shape being that of a spool; the wedge, made of yew wood with the head protected from splitting by a wrapping of withes; the chisel, consisting of a sharp sliver of stone (or iron, even in very early times) inserted in the end of a piece of yew; the adze, a bone (iron) cutting edge lashed on one side of a trapeziform wooden handle; the mussel-shell knife, which is ten to twelve inches long and four inches wide, with yellow-cedar bark gummed along the hinge edge, by which it is held; the bone knife, made by splitting out and sharpening a wide sliver from a leg-bone of a bear; the wood-carving knife, consisting of a mussel-shell worked into a curving point for the cutting of curved lines; the drill, a tapering bone point on the end of a wooden spindle, which is twirled between the palms. The maul, wedge, adze, and drill are still used.

The weaving of robes, mats, and baskets was, and, excepting robes, still is, a very important industry. Even the art of making robes is not yet forgotten, though the necessity long ago ceased. The material is prepared as follows: About the month of July the women collect very

long, three-inch strips of yellow-cedar bark, which are then laid in the water of some quiet harbor, to remain until they sink. The bark is then soft enough to be worked, and is taken out and wrung. This removes the water and loosens the useless epidermis. Still in a great twist from the wringing, the bark is beaten with a maple stick to soften it, and is then opened out and worked between the hands like a skin in the process of tanning. When the bark has become thoroughly dry, the worker, keeping her hands moist with fish oil in order to preserve its pliancy, tears it into strips a quarter of an inch wide, her only implements being her fingers and her thumbnail. These strips become the warp of the robe, and yarn spun from mountain-goat hair forms the weft. The bottom of the robe is rounded at the corners, and the opposite margin, or that which encircles the neck and shoulders, is edged with a strip of fur, usually mink. For the width of three or four inches the entire margin, at the bottom and at the two sides which become the front when the garment is worn, is all wool, both warp and weft.

Mats are of several kinds, but all are alike in being made of red-cedar bark (*ténas*). The commonest and the best, *hlíwi*, is a twill weave of quarter-inch strips, while *tságwihl* is a checker weave. *Yíputsuwáq* is a rougher mat used for such purposes as cleaning fish, and is a wrapped weave, the weft cords being several inches apart. In *máwakuq* the bark is twisted and plaited, forming a very strong fabric. Mats are made for various purposes and in varying sizes, from the smaller pieces used as sails, as carpet in the bottom of the canoe, or a cushion under the paddler's knees, as covering for canoes on the beach to prevent cracking in the heat of the sun, and as roof and walls of temporary shelters, up to the large sheets once used to cover the inside walls of the better houses and the long, yard-wide strips that extend before the feasters in a house of the upper class. Tule mats, so common among the coast Salish south of the Kwakiutl, were obtained by the latter from the most northerly of the Vancouver Island Salish, either by purchase or by spoliation. They were highly prized as mattresses, but could not be made for lack of the material, which is not found in the Kwakiutl country.

When yellow-cedar bark is to be used for such purposes as the padding of a baby's cradle, wadding for guns, or tinder, the strip is drawn lengthwise across a paddle set on edge and is struck with a whale-bone implement at every point of its length, the blow falling just off the edge of the paddle. This implement, which is about three-eighths of an inch thick and three and a half inches wide at one end and

five at the other, diminishes to a dull edge at the lower margin, while midway in the upper edge is an elongate hole to serve as a hand-hold. This beating leaves the bark very pliable, and after it has been shredded and rubbed between the hands it becomes quite soft, almost flossy.

Baskets of many shapes and sizes are made. In general they may be divided into two classes: those that are more or less flexible, being made of checker-woven or twill-woven red-cedar bark; and those that are rigid, being made of branches and roots of the yellow cedar and roots of the spruce.

One of the commonest bark baskets is the *tlápat*, a cylindrical, flat-bottomed, storage receptacle about three feet deep and of equal diameter. It is supplied with eyelets at the edge so that the top may be laced together, and is used for containing blankets, clothing, smoked fish, or a woman's materials for weaving. The "spoon container" (*kyáyatsi*) is twill-woven, with geometrical designs effected by the use of black strips of bark as well as by openwork. This vessel is about ten inches long, equally deep, and four inches wide, and all faces are rectangular. The wallet is a flat bag for containing one's trinkets.

Of the rigid baskets the burden-basket is the commonest. This is a wrapped-twined receptacle, the perpendicular and the horizontal splints being strips of cedar branch, which at their intersections are wrapped with a continuous ribbon of split spruce- or cedar-root. There is no attempt to make it water-tight, in fact the mesh is rather open. The vessel is rectangular at the top, and the sides slope inward to a somewhat rounded, oblong bottom. It is much the shape of a thick, blunt wedge, and the average size is about thirty by twenty-four inches at the top. It is carried on the back, supported by a tumpline.

The principal weapons of the primitive Kwakiutl were the bow and arrow, the sling, the war-club, and the spear. The shaft of the war-arrow was a rod of yellow cedar the length of the forearm from elbow to fingertip. The point was of bear-bone or elk-horn, four finger-breadths long, with serrate edges, and at the base a socket like a pair of jaws, into which the shaft fitted. When the projectile struck its mark, the shaft leaped back with the impact and left the point embedded beyond reach in the flesh. Such a point the Lekwiltok call *tátawítlaiyu* ("jumper in"). The bow, which was about four feet long, was of yellow cedar or maple. When yellow cedar was to be used for a bow it was steamed and bent to increase its elasticity. Slings were of two kinds: a long one, which was whirled several times to gain momen-

tum before releasing the missile, and a shorter one intended for use at closer range without preliminary swinging. In using the latter kind, the thrower held the stone in the pocket out in front of the body with the left hand, while the right was raised behind and at the side with the elbow bent. Then with a quick backward jerk and a forward fling the missile was released. A reliable informant declares that he has many times seen an especially skilful slinger kill ducks out of a flock at two hundred yards. The stones used in slings were rather larger than hens' eggs. The typical war-club was a curving piece of whale-bone about fourteen inches long, two inches wide, and swelling from a quarter of an inch in thickness at the edges to more than half an inch in the middle. The convex edge was rudely sharpened, and the tip of the handle was carved to represent some mythological creature. The short spear sometimes had a large, fixed point of bone; but more commonly the tip of the yew shaft was sharpened and charred.

Defensive armor was limited to sleeveless jackets of tanned skin or cedar-bark rope. Skins of grizzly-bears and cougars were highly favored, these animals being the most ferocious of the local fauna. Stiff and cumbersome as a medieval corselet was the jacket made by sewing tightly together ascending coils of braided, three-quarter-inch, cedar-bark rope.

Fire was obtained by means of the drill, of which the spindle was fashioned from a fir branch that had hardened by lying long in water, and the base from very old, dry cedar wood. The spark was caught in yellow-cedar bark floss. While twisting the spindle between his palms the fire-maker looked not at the wood but upward, and kept repeating." Please come, fire!" The drill was seldom used, as fire was constantly burning in some house of a village, and moving parties carried fire by coiling in a box a long twisted rope of old matting or of cedar-bark and letting the smouldering end hang over the edge of the receptacle.

Among the miscellaneous implements of the Kwakiutl was the basket-maker's root-splitter, a flat-pointed piece of deer-bone abruptly widening out above the point. Needles were of two forms, one with an eye, the other eyeless. One of the first kind was made of a hemlock twig terminating in a pliable fork, the two branches of which were bound together to form an eye. Sometimes an end of the twig was beaten and frayed, and the fibres were tied in such a way as to form the eye. Eye-needles of bone were not unknown. The eyeless needle

was made ready for use by beating out the end of a slender, new shoot of hemlock or of a sliver taken from the heart of a rotted hemlock log, and twisting an end of the thread with the pitchy fibres of the needle. The comb was a strip of yew about five inches long and two inches wide, the grain running transversely. The teeth were produced by scoring the wood on opposite sides with a sharp bone point.

The numerous implements and appliances used in fishing and hunting are most appropriately mentioned in connection with the description of the methods followed in these industries. Fishing is still of prime importance to the Kwakiutl. The various devices employed in this occupation in former times are evidence of considerable ingenuity, and they were used with much skill.

The earliest spring fishing is for herring and herring roe. This occupies approximately the second half of March, at which time those tribes that have no herring grounds near their villages move in a body to the nearest fishery. Thus the Lekwiltok migrate from Cape Mudge to Comox, a distance of about thirty-five miles, to fish in Salish waters.

When the tremendous shoals of herring appear, the people swarm out in their canoes, herring-rake in hand. This implement (*hlutaiyu*) is a flat strip of wood eight feet long and three inches wide, one edge for a space of some thirty inches at one end being set with a row of bone (now iron) teeth pointing slightly upward. The fisherman, standing in the bow while his wife or other companion paddles, whips the rake through the water and shakes the impaled fish into the canoe. A short time suffices to obtain a large quantity. After the water has become milky with the deposit of spawn, the rake is superseded by the dip-net, which in clear water is so conspicuous as to frighten the fish. This is a bag-like device, formerly made of nettlefibre, spread upon the prongs of a forked pole in such manner that the releasing of a cord which extends up the handle permits the meshes to slip down along the forks and thus close the opening upon the captive fishes.

As soon as a load of herring is brought ashore, the women of the family begin to string them on slender fir shoots about five and a half feet long. Twigs and needles are not stripped off, but do not show after the shoots are crowded with fish. The last herring at the butt of the withe is tied fast by the gills and the jaw, and the tips of two shoots are knotted together. This pair is now ready to be hung on the drying frame, which is made as follows:

A row of several spars (usually hemlock) about twenty-two feet

long are driven into the ground at an angle of about sixty degrees from the horizontal, with a space of twelve feet between each two. Under each pole are driven five supporting, upright posts, equidistant and, of course, of varying length. Then across the face of the spars five horizontal courses of poles are laid the full length of the frame and bound at the points of intersection with the supporting upright posts.

On the long horizontal poles are hung the strings of herring. To keep off the troublesome crows there is erected at each end of each frame a *kyákya'ma* ("raven frightener"), consisting of a post and a cross-bar with a hat on the top of the post and (formerly) a bow and an arrow at the ends of the bar. The drying frames are always placed not only where the sun will strike them, but where the wind, especially the southeast wind, has access. About ten days of fine weather are required for the drying. When the fish are thoroughly dry, the strings are taken down and the herring torn off the shoots, packed into cedar chests, and trodden down.

Close watch is kept on the water at the spawning ground, and when it turns milky it is known that spawning has begun. Then all the men gather small hemlock saplings, six to ten feet in height and with vigorous branches covered with needles quite up to the stem, severing each at the base with a single blow, so that the end is sharp. Laden with these saplings, the canoes put out to the spawning ground, and after the tide has ebbed and left them resting on the bottom, each head of a family proceeds to set up his trees in a long, straight row with the branches just clearing one another. The rows are sufficiently separated to permit one to walk between them. In setting the saplings a stout, pointed stake is driven into the ground for about eighteen inches, and into the hole thus made a tree is planted so firmly that the waves cannot overthrow it. The number of trees set out depends on the size of the worker's family, on his own industry, and on that of his wife. Thus, a man himself may be very energetic, but if the woman is lazy it is useless to gather a great quantity of roe, because she will not cure all of it. The minimum is about forty trees.

After all his trees are placed, the worker masticates some dry salmon spawn and sprays it on them as he walks along the row. This is believed to attract the herring. Finally he thrusts into the bottom at the end of his row a long pole with a few twigs on the tip. This tuft, remaining above the water at high tide, enables him to find the end of his row, and watch the spawning. There is no attempt to place iden-

tifying marks on these poles, but each man remembers the relative position of his row.

As soon as the rising tide covers the saplings, the herring can be seen depositing their spawn on the green twigs. Usually the trees become well covered, but not full, on the first day. Nevertheless they are left four days in the water, in order that the waves may wash off some of the slimy milt with which the roe is thickly covered. There is an element of luck in this work, inasmuch as some rows, for no apparent reason, fail to receive a heavy deposit.

After four days have passed, the fishermen take their canoes to the spawning ground. The trees are now snow-white and bent low with the weight of the spawn. At ebb tide the men lop off the branches, wash them, and pile them in the canoes. On the rising tide they come ashore, and the boughs are placed on the upper poles of the drying frame by a man who stands on the rack and hauls them up with a rope, on the lower end of which is tied a forked stick to serve as a grab-hook.

Another method of securing roe is sometimes practised by young men, or women more than usually fastidious. Desiring spawn free of hemlock needles and twigs, they take a long cedar pole about four inches in diameter and anchor it at both ends in water where low tide cannot leave it stranded. Over it they hang branches of smooth-leaved shrubs such as salal, or long wisps of eel-grass, each double string having a small weight attached at the ends in order to keep them perpendicular in the water. The float rises and falls with the tides, and the green shoots, being constantly submerged, collect a heavier deposit than the trees. Spawn so gathered is free of leaves and trash. Some tribes, as those of Rivers inlet, do not set trees in the bottom, but tie long, green boughs to floating timbers.

The drying sacs flatten and turn yellow-white. Two days of fine weather with a good wind will dry the spawn. Care is exercised that it may not become hard, for then it would crumble. When it has reached the proper degree of desiccation, it is stripped from the branches, and all the needles come with it. Spread on mats, it is turned and stirred at intervals, so that wind and sun may dry it more thoroughly. This is accomplished in less than a day. Finally it is placed in baskets, trodden down tightly, and covered with a piece of matting, and the basket is laced shut and stored in a place where water cannot reach it.

The dry roe is thus prepared for eating: a quantity is soaked in a large wooden dish, and before it has become quite soft it is rubbed be-

tween the hands and broken up. The hemlock needles and twigs float on the water and are thrown out, and the cleansed roe is placed in the cooking vessel. After boiling, it is covered with oulachon oil, or, in lieu of that, with whale oil. In hot weather the cleansed and softened roe is covered with cold water and eaten uncooked. Sometimes the dry roe, uncleaned, is dipped in oil and eaten, the hemlock twigs counteracting the salty taste. In some localities, as at Cape Mudge, herring roe is never eaten at night, lest it induce nightmare and swelling of the eyes.

The Wikeno, and probably other tribes, have preserved an ancient custom in the practice observed by the person who in spring finds the first dead herring or oulachon on the beach. He holds it in his hand and addresses it, "Oh, grandchild, you have come!" Then he makes a smacking sound with his lips, and, still gazing at it, continues, "May you increase instead of decreasing, and so always!" Then he lays it down. When the first of any species of salmon is found, a similar prayer is offered, and the finder bites its fin.

About the first of April begins the fishing for oulachon (*Thaleichthys pacificus*), smelt-like fish which ascend certain mainland rivers in immense shoals. As the oulachon streams are limited in number, and the fish cannot be taken for its oil above tidal water, not all the Kwakiutl tribes can engage in this pursuit. Kingcome river, at the head of Kingcome inlet, is an oulachon stream, where besides the resident Tsawatenok several tribes have fishery rights. These are the Nimkish of Nimkish river opposite Alert Bay; the Koeksotenok of Gilford island; the Guauaenok of Drury inlet; the Hahuamis of Wakeman sound; and the Komkyutis, formerly of Thompson sound, now a sept of the Qágyuhl at Fort Rupert. At the head of Knight inlet oulachon fishing rights are possessed by the Qágyuhl of Fort Rupert; the Mamalelekala of Village island; the Tlauitsis and the Matilpe of Turnour island; the Tenaktak at the head of Knight inlet; and the Awaitlala on Knight inlet at Glendale cove. At Rivers inlet the Wikeno and others had oulachon streams. Members of all these tribes still fish for oulachon, but not in the number they once did, when practically every family moved its goods and its house-boards and established a temporary home at the fishery.

Fishing stations are family property, and the rights are jealously guarded. At each station, the location of which is fixed by ancient custom, the stream is dammed either with a wicker weir or, if the water is shallow, with a line of stones. In the former case the fish are taken

by men in canoes above the weir, each of whom holds a dip-net over an opening in the obstruction. In the latter case the fish are diverted from the channel by stone barriers extending from the back into the channel and pointing down stream, to be scooped up and poured into burden-baskets at the edge of the stream; or they are taken in dip-nets at the ends of the barriers as they swim between two opposite and nearly touching dams.

The oulachon are at once piled in great rounded heaps six feet in diameter, and are covered with mats, boards, and sticks to protect them from flies and birds. Such a heap is called a "hole," a circumstance that points to the probable former use of excavations for this purpose. A "hole" is the equivalent of two loads of fish from a thirty-five-foot canoe. A single family used to provide ten or twelve "holes."

The fishing continues little more than a week, and the next few days are busily passed in gathering enormous quantities of fuel. After the fish have been rotting for perhaps twelve days, the work of rendering begins. Large cedar boxes three to four feet in depth (the so-called "grease tanks") are partially filled with water, which is brought to the boiling point by means of heated stones dropped into a submerged basket. The basket full of stones is then removed, and the half-rotted fish are scooped up and poured into the tanks. The water is kept at or near boiling point, and the mass is frequently stirred. After a certain time the fish rise to the surface. Then cold water is added, and with split-cedar tongs the man removes the stones one by one, while the woman pours cold water over them to wash and cool them, and then, taking them from the tongs in her hands, throws them aside. By the time all the stones have been removed, the remnants of the fish have settled and the oil has risen, and it is now dipped out with a wooden cup and poured into a pail. There it remains until the water has separated out, when the oil is carefully poured off into the cedar chest in which it is to be stored. Families resident in the vicinity of the fishery sink the storage tanks in excavations until the top is flush with the ground, and cover them with boards and earth. "Grease feasts," at which oulachon oil, the only food provided, is gulped down from great bowls, are commonly held soon after the oulachon season, for the oil is difficult to transport and with age it acquires an odor none too delicate even for a coast Indian. The surplus, amounting formerly to considerable quantities, was exchanged for salmon with those tribes which, having no oulachon fisheries, had spent the corresponding season in salmon

fishing.

Five gallons, or a little more, are obtained from a single rendering tank, or more than seventy-five gallons to the "hole." The average storage chest contains twenty-five to thirty gallons; those of larger size hold forty, and a few very large ones seventy-five.

In former times bladder-kelp (*Nereocystis Luetkeana*) was prepared for containing oil by drying in the sun, soaking in salt water, and working in the hands as in softening a tanned skin. It was then blown up tightly and oiled, and finally was rolled into a small wad. When oil was to be transported, unless in great quantities in the "grease tanks," it was poured into these kelp receptacles, which were then coiled with the head in the centre and laid in the canoe. In this usage originated the occasional name of "bottle seaweed."

The foregoing description applies to present methods, with the exception that the oil is now rendered in metal boilers and for the greater part stored in five-gallon tins. Previous to 1908 the oil sold at the rate of seventy-five cents to one dollar per tin, but since that time the price has advanced to two dollars. The annual combined product at Knight inlet and Kingcome inlet is said to be some fifteen hundred gallons. In 1910, however, the people lingered so long at the potlatches that they lost the first and best run of the oulachon, and the entire output was only a few hundred gallons.

Halibut fishing is followed by the tribes at the northwest end of Vancouver island and the mainland fronting on Queen Charlotte sound. These are the four tribes of Quatsino sound, the two tribes (one now extinct) at Cape Scott, the Nawiti of Hope island, the Goasila of Smith inlet, the Nakoaktok of Seymour inlet (now of Blunden harbor), and the Wikeno of Rivers inlet. Others occasionally fished for halibut, but these formerly made it a business. The principal halibut banks are near Hope island, Galiano island, the Gordon group, and certain islands of the larger inlets. The fishing began about the first of May, simultaneously with the appearance of a small bird (*áhahwuni*) locally called the salmonberry bird. As the villages were not far from the banks there was no migration during the halibut season.

The halibut hook consists of a piece of the upper half (said to be always stronger than the under half) of a balsam branch, steamed and bent in the shape of the letter U, with a bone (now steel) barb tied at one end and pointing in toward the concavity. Its length is four to five inches. The line is attached to the middle of the arm opposite the barb.

Such hooks are still occasionally used. Formerly the usual practice was to suspend one of these hooks from each end of a wooden arm made by binding together two stout, short pieces of cedar or balsam branch so curved that the resultant device resembled the inverted keel line of a canoe. In such cases the line was attached to the middle of this arm, and from the same point was suspended a stone sinker. The hook is baited with a small rock-cod, which completely covers the barbed arm, and the halibut, thrusting the tip of its upper jaw into the opening, is hooked firmly. The fishing is done from small canoes scarcely larger than some of the fish taken.

The best fishline was made of bladder-kelp (*Nereocystis Luetkeana*), but cedar-bark and nettle-fibre also were used. Kelp for this purpose was always obtained in places where the tide runs swiftly, because there the stalks attain the greatest length.[5] Only the very largest, those with heads six or seven inches in diameter, were taken. At the lowest tide the alga was pulled in slowly; if its roots clung fast to the rocks, the worker tied a knife crosswise on the end of a long pole and by this means cut off the stalk at the root. The upper end was severed at a point where the diameter began to increase perceptibly. Each piece was coiled, and the coil was bound with cedar-bark at two opposite points. The coils were then weighted down with stones in a stream above the reach of tidal water, and after a period of two to six days the brown, shiny appearance disappeared, the stalks becoming white and swollen to twice their original thickness. In a place well exposed to sun and wind they were stretched as taut as possible on a frame consisting of two pairs of posts, each pair joined by a narrow board to which the ends of the kelp were tied with cedar-bark cords. Thus the kelp remained ten to twelve days, until the stalks had shrunken to about one-eighth of an inch in thickness, when they were taken off by holding a stone under them at the point to be cut and striking from above with another stone. They were dragged by one end to salt water, and, as they were hard and brittle, great care was observed to make no abrupt turns in the course, lest the kelp be broken. After the stalks had been in the water a few minutes, the worker grasped the

5 Forty to fifty feet is the usual length of the longer stems, although seventy feet is not rare; and a stem one hundred feet long has been reported at Port Renfrew, British Columbia.

bunch in his left hand and rubbed them lengthwise with a handful of fresh rockweed (*Fucus*). They soon began to soften, and after perhaps an hour of this process he coiled the pieces one by one, and proceeded to tie them together in a long line by making a simple knot in the end of one piece over the end of a second piece, and then casting a simple knot in the end of the second over the knot first made. He then drew the two pieces apart so as to bring the two knots together tightly, cut off the two free ends, and passed on to the next piece. At the end of the whole line he made a single knot, where the fathom-long leader of plaited hair was to be fastened. The line was now coiled and hung in the house above the fire in the smoke, in order to become blackened and less conspicuous in the water. Before use it was thrown into salt water, and in a few minutes, by the time the fisherman had his canoe ready, it absorbed sufficient water to render it flexible. It made a very light trolling line, much easier to pull than one of our twisted or platted lines. It did not twist, and it coiled naturally without kinks. a whole coil of it could be thrown overboard at once, and it would straighten without snarls. The kelp line was used not only in halibut fishing but also in trolling for silverside salmon and in sea-otter hunting. The trolling line was eight fathoms (forty feet) long.

The flesh of the halibut is cut off in pieces about eighteen inches long and as thick as the wrist. With a broad mussel-shell knife (now a steel implement of the same shape) the workwoman slits each strip down the middle, almost severing it; and then working out from the middle line, just as if opening a roll of paper, she slices each half into a thin, continuous sheet. These sheets are hung on poles in the sun until they are thoroughly dry. The flesh is neither smoked nor cooked, and is eaten without further preparation than breaking into pieces and dipping in oulachon oil.

The oulachon-fishing tribes traded off their oil for dried halibut steaks. In 1890 the rate of exchange was a hundred pieces of halibut for one dollar; in 1905 it was thirty; and in 1910, twenty. It has been known to sell at eight for a dollar.

Silverside salmon and occasionally spring (Chinook, or quinnat) salmon are taken on the trolling hook, the primitive form of which was a double-pointed bone four inches long. It was attached not quite at the middle, and was inserted into the gullet of a herring with one point just protruding. Spring salmon, however, are more commonly caught by means of a long spear with a double-pointed head set on the

shaft by a socket, a stout line running from the head up the shaft to the spearsman's hand. In streams, when salmon are not present in large numbers, the dip-net (*hôtaiyu*) is used.

Dog salmon, which run in September and October, are the species taken in greatest numbers. One of the means formerly employed was a bag-like, nettle-fibre net (*kítlum*), the largest of which were forty fathoms long and ten fathoms wide at the opening. The lower edge of the mouth was kept submerged by means of stone sinkers, and three men in a canoe dragged the net downstream. The fish were removed at the small end of the net, where provision was made for opening it. In good fishing, the very largest canoe was filled by a single draft.

Of greatest importance in salmon fishing is, or was, the weir, all the various forms of which are based on the principle of a fence obstructing the river, with openings leading upstream into wicker compartments from which there is no escape. One of the most effective weirs is constructed in the following manner: From each bank to the deeper water of the stream is built a fairly close fence consisting of slender poles driven into the bottom and bound together by a line of long poles on the upstream side at their tops. At deep water each lateral fence turns at a right angle and is continued against the current for about four feet, these last two sections being then connected by a line of fence that spans the channel. Thus the river is completely obstructed. At each of the two corners where the lateral wings of the fence turn upstream is bound the open end of a long, tubular, wicker basket, which extends downstream with its closed end in such shallow water that it is only partially submerged. This part of the structure is about twelve feet long and tapers gradually to a diameter of some fifteen inches at the lower end. From the deep-water side of the open ends of these tubular traps two converging lines of fence are led upstream to a point about two feet from the transverse section of fence that obstructs the channel. Between the ends of the converging lines there is just space for a salmon to pass. Swimming up the river toward the spawning grounds, the fish push through this narrow opening, find themselves checked by the fence, and turning back pursue the line of least resistance into the long, tubular traps, in which they cannot turn about. At the lower end is a sliding door, through which they are removed, usually dead because of the crowding salmon behind them. In some cases the space enclosed by the lines of fencing is provided with a flooring of poles, which can be raised at any edge so as to pour

the salmon down' into the traps, if they fail to turn into them of their own accord.

The building of a weir is a communal undertaking. The chief of the small, local group controlling it has the first right to take fish from it; after him the others of rank, and finally the common people, have their turn. The construction of weirs being now illegal, these devices are rarely seen.

Dog salmon to be cured for winter consumption are caught in October, when they have become lean, an excess of fat being objectionable because it makes the flesh difficult to preserve in a damp climate. This is one of the reasons why, as a rule, no other species is cured; the other reason being that at the time when winter supplies are being secured the other species of salmon are far inland at their spawning grounds in the lakes and at the head waters of small streams, while the dog salmon spawn in the lower courses of the streams. But among the Wikeno, favorably situated at the head of Rivers inlet and a very short distance from a large lake fed by many short streams, it is customary for the head of an average family to take, at the beginning of October, two canoe loads of sockeye (one hundred fish constituting a load), then an equal number of spring salmon, and lastly the same number of dog salmon.

In preparation for curing, the fish is opened at one side of the backbone, which is then removed with the head and laid aside. The roe is thrown into another heap, the entrails and gills are rejected, and the flesh, inside and outside, is rubbed off with a handful of green leaves. The strip along each side of the back is cut off and sliced into a thin sheet, leaving the fish itself of the uniform thickness of the flesh at the belly. Held open by skewers, this is hung up to dry, first in the sun, then in the smoke of the house-fire. The thin sheets are hung on poles to become partially dry in the sun; and then skewers are inserted to prevent curling as they thoroughly dry out in the smoke. Above the fire are five tiers of racks, and each lot of salmon spends a day on each of the first four, beginning on the lowest. After five days on the topmost tier the cured flesh is packed in large bag-like baskets or in cedar chests, which are kept in a dry place. In 1895 the price of dried salmon was one hundred for a dollar; in 1910 it was about twenty for a dollar.

Each head, with the backbone attached, is inserted between the jaws of a split cedar stick, the end of which is thrust obliquely into the ground so that the head and backbone are held over a small, smoky

fire. This part of the fish is used in making soup. Some of the salmon, after the dressing, are placed in the cedar tongs, the edges of the fish being held apart by small slivers, and are thus very slowly roasted, with frequent turning, after which they are hung above the house-fire to smoke.

Rock-cod, mostly for bait in halibut fishing, are taken in a wicker trap (*tlúmkum*), almost cylindrical but flat-bottomed. In the top is a small opening set with splints converging inward so as to permit ingress but prevent egress. The material of the trap is long, split cedar branches and spruce-roots, and the usual diameter is eighteen to twenty-four inches. It is baited with crushed sea-urchins and sunk by means of stones. A cigar-shaped wicker trap *(líhsit)* is set in shallow sloughs where the oulachon run, and when full is rolled ashore.

The octopus is a delicacy. The hunter, finding a den, inserts the end of a sharp stick under the rock, feels about until he touches the hard part of the body, and pushes the stick into it. The octopus, mortally wounded, comes out, and the hunter drags it ashore or into his canoe. It is not permitted to linger, but is beaten to death against the rocks, in order that the flesh may be edible. The color almost immediately changes to pink, whereas if the creature dies slowly it is said to remain purplish.

Porpoises are still harpooned on moonlight nights as they sport in the calm, enclosed waters. Whaling was not practised by the Kwakiutl tribes in the historic period. A tradition declares that a certain man of the Hoyalas, a now extinct tribe of Quatsino sound, was a whaler, and the presence of quantities of whale-bone on the beach at an old village site gives color to the statement.

Quantities of clams are dried by the tribes situated near clam-beds, such as the Fort Rupert group, the Mamalelekala, and the Wikeno. The shellfish are opened on the beach and strung on three parallel unbarked raspberry shoots about two feet in length, two passing through the ends of the clam and one through the middle. They are left hanging in the sun until the entire lot is ready. In the morning a steaming pit is prepared; the clams are laid on the green leaves that cover the heated stones, and are covered with mats. But little water is poured on, as the clams contain enough moisture to create the necessary steam. When, toward evening, steam ceases to rise, the mass is uncovered and the sticks are carried into the house to be stood up, side by side near a great fire, on a long board with their tops resting against a horizontal

pole supported on two upright forked sticks. Here they bake on both sides, and then they are placed on a rack in the smoke. After about two weeks they are taken down, hard and thoroughly dry, and are laid between two mats, and a woman treads on them to flatten them. Still between the mats, the entire lot is bent over in such a way as to crack the sticks at the middle; and in this condition the clams are stored in baskets. A stick of clams now sells for twenty-five cents.

Abalones are secured by means of a two-tined spear, which is thrust into the shell and given a quick twist before the gastropod can exert its powerful suction and fasten itself immovably to the rock. The flesh is usually dried and strung on cords.

Many marine mammals were hunted with the harpoon. Such were the sea-otter, the hair-seal, the fur-seal, the sea-lion, and the porpoise. Sea-otters and fur-seals were approached while sleeping on the surface of the water. Hair-seals and sea-lions are still attacked while basking on the rocks. Hair-seals formerly were taken also in strong nettle-fibre nets (*tsánatsaiyu*) as much as thirty fathoms (one hundred and fifty feet) long and five fathoms in diameter at the mouth, tapering to the closed end, where they were just large enough to permit the seal to swim quite to the end but not to turn about. Such nets were set in the mouths of turbid rivers at high tide, that portion of the channel not occupied by the mouth of the net being obstructed with poles. When the tide fell, the salmon returned to the sea, and the seals following them found themselves entangled in the net.

The season for hunting sea-otters began about the month of September, and continued as long as the weather was fine. The following customs of the Koskimo were observed by an informant about the year 1865.

Sea-otter hunters preparing for the chase bathed and rubbed their bodies with hemlock sprigs morning and evening for four days, each captain apart by himself in the woods, and his two paddlers together. They slept apart from their wives on beds of hemlock and spruce, believing that the fragrance would help to rid them of human odor and enable them to approach the otters with less likelihood of untimely discovery. They slept as little as possible, in order that their sleepiness might enter the bodies of the sea-otters. Herring roe, dry salmon, grease of all kinds, were taboo, and other foods were eaten in moderation. At each meal the captain of a canoe put the first morsel to his mouth and then, tossing it into the fire, said: "Now, may *Kwáhtlale*

help me!"[6] Some of the captains secretly rubbed their bodies with strips of fat cut from a corpse.

On the fourth morning after the beginning of their purification, the weather being favorable, the hunters came out of the woods ready for the departure. They wore cedar-bark blankets pinned around the shoulders rather loosely, so that an arm could easily be thrust out. A lock of hair was brought forward from each side, and the two were tied above the forehead. The bases of two hemlock sprigs were bound together and tied into the knot of hair, so that the green sprigs extended across and above the forehead and about ten inches beyond the temples. On the beach were the canoes, raised on blocks and containing paddles and weapons. The keel of these hunting canoes was cut away forward so that they made no noise as they slipped through the water; and consequently they were easily capsized. Generally about forty canoes engaged in a hunt. The hunters lifted their craft bodily, placed them in the water rather closely together, and embarked. Then one called in a high voice, "*Ya*^{n}*....!*" while all the others beat rapidly on the thwarts with their paddle handles. "*We!*" shouted the leader, and the men gave a single beat, and all shouted, "*Ya!*" Thus they thought to frighten the sea-otter spirit. After this had been done four times, they began to sing, beating with their paddles. This ancient song, which contained no mention of the sea-otter, was rendered four times, and the men began then to paddle, all in unison, raising the paddles with a quick forward fling so that the drip was scattered in a thin stream with a minimum of sound.

The paddlers strained every muscle in an effort to take the lead, for the first canoe to draw away from the others became the leader of the hunt. When the leadership had been thus determined, the others began to diverge in a wedge-shaped formation. Captain, as well as crew, paddled, sitting on the forward thwart with one foot back under it and the other advanced, and using a stroke somewhat different from that of the men. The leader laid his course for a patch of kelp, for sea-otters, it is said, sleep on the top of matted kelp. As soon as an otter was discovered, the leader indicated the place with raised paddle, and

6 "We [an ejaculation]! Kwáhtlale [Sitter-on-the-fire] laáms [now] wáhettle [may help] gyáhun [me]!" Kwáhtlale is the spirit residing in the fire, who causes the flames to rise.

as a signal that they had noted his action, the other captains pointed their blades. The leader held back while the others sped forward and formed a circle about him and the otter. Then he loosed an arrow, and the otter, if struck, rolled and struggled on the surface, trying to break or dislodge the arrow. The leader was not permitted to spear the animal, but must leave that to some other one of the captains, all of whom now dashed in. If one of them got his spear into the animal, the rules compelled him to leave the actual recovery of the prey to one of his fellows.

If the otter was not struck by the first arrow, or if it dislodged the missile before it was speared, it dived, and the leader's canoe followed the wake of rising bubbles. Meanwhile the other canoes had to preserve the circle, closing in on the side behind the otter's course and giving way on the other side. All the men kept up a fearful noise of shouting and beating the gunwales in order to frighten the animal. When large bubbles began to rise rather far apart, the leader shouted a warning to the others to be ready. Soon the otter rose, and as it propelled itself on its back[7] arrows rained down about it. If it remained alive, it dived again, and the pursuit continued. An otter never remained long under water after the second dive, but during the first two dives the hunters had difficulty in preserving the circle. Unless unfavorable weather interfered, an otter was seldom lost.

The skin belonged to the man whose arrow struck the animal. If more than one arrow found the mark, no matter by how narrow a margin, the skin was the joint property of the owners of the arrows. Each hunter had a distinctive mark for his weapons. The successful captains paid a single Hudson's Bay Company blanket, valued at a dollar and a quarter, to each of their paddlers, to the man who speared the otter, and to the man who dragged it in. The leader of the hunt retained leadership during the day, but unless his arrow struck the otter he received nothing. On the return each successful captain thrust an arrow through his forelock alongside the green sprig.

On the following day the owner of the skin laid the animal on a new mat, and after three preliminary motions he cut the skin from chin to throat, at the same time emitting a smacking sound from his

7 Old sea-otter hunters assert that this animal never swims on its belly.

lips and saying, "I have hit it!"[8] The flesh of the sea-otter, always fat, was kept for food. The skin was suspended on a cedar withe in a slit in the nose, and a heavy stone was attached to another withe tied about the flippers. While it was stretching over night, the owner prepared a stretcher consisting of four strong bars lashed into a rectangle about eight feet long and half as wide. In the morning the skin was sewed loosely along each side to a stiff hemlock rod, the cord of bark or split spruce-roots passing through holes in the skin half an inch apart. A withe wrapped about each flipper was attached to the bottom of the frame, and a long withe was passed through the slit in the nose, over the upper bar, and back through the slit. On this rope the workman hauled vigorously, with feet braced against the bar, and when he had stretched the skin as far as possible, he made the rope fast. Then a kelp fishing line, well moistened, was wrapped spirally about each side rod and the corresponding side of the frame, and by this means the skin was stretched sidewise as far as possible. Then the frame was raised from the floor on two boxes, one under each end, heavy stones were laid along the median line of the skin, and water was poured into the depression.

The next morning the workman loosened the kelp fishing lines and stretched the skin lengthwise, made fast the end rope, and tautened the side lines. Then after sprinkling water on the skin he carefully fleshed it with a cockle-shell, and stretched it again. The standard size for large sea-otter skins was six feet seven inches by two feet nine inches, though the animal itself is only about three feet six inches in length. The skins were always perfectly straight along the sides up to the neck. When finally the desired size was attained, the workman stood the frame upright, and scraped out all the moisture with a clam-shell, then laid the frame on the drying racks above the fire, with the fur side up, and covered it with a mat.

Thirty double trade blankets, which in later days of the trade was equivalent to sixty dollars, was the standard price for a prime skin.

The deadfall (*kyípiyu*) is used for bear, wolves, and cougars, and in a smaller size (*kwétlayu*) for mink, marten, raccoon, beaver, and otter. A third kind is occasionally set for deer, but the favorite method

8 Kápuntla. It was a very common custom, when an arrow or a bullet went true, to smack the lips and exclaim, "I have hit it!"

of killing deer is by "shining." The hunter crouches in the bow of his canoe, screened by a mat from the light of the fire that burns on a stone hearth amidships. A companion, steering in the stern, is also thrown into shadow by a screen. As the canoe slips silently through the water close to the shore, the reflection of the firelight in a deer's eyes presents the hunter with an easy mark.

A Wikeno deer hunter is expected to practise continence for seven days prior to the hunt. On the seventh night his wife walks into the water up to her knees, the hunter following. The woman places a bit of charcoal on the water, and both return to the house. In the morning the hunter gets into the bow of his canoe, and with another man (never a woman) paddling in the stem, proceeds along the shore. It is confidently believed that because of the charm that has been practised he will soon find a deer standing in the water up to its knees. Failure is ascribed to his supposed neglect of the rule of continence. This charm is used also for the amphibians, such as mink, otter, and beaver, and for all the larger land animals that are frequently seen at the water's edge.

Pitfalls are not employed, nor are nets stretched across the runways of deer and elk.

Mountain-goats formerly were taken by the mainland tribes in the following manner: Strong hoops two feet or more in diameter, made of intertwined cedar withes, were distributed along a trail used by the animals in coming down the mountain to feed, being suspended at the level of a goat's head and attached by a strong rope to a tree growing out from the brink of the precipice. When the goats came down single file, the leader would get his head into a ring, and feeling it on his neck would give his head an impatient fling, when the short rope would bring him up with a jerk and drag him over the edge. There he would hang in-midair, held in the ring of withes by his horns. Múllitsus of the Tsawatenok, who died about 1905 at the age of sixty-five, once made three hundred rings and placed them in the goat trails. During the season he caught seventy goats. While he was making the rings he would not permit any one to see or approach him; he worked in solitude. After setting his snares (*mógwaiyu*) he would not go to examine them until he dreamed that the snares in a certain place had caught a goat.

The Wikeno in parties of two or three hunted goats with dogs trained to drive the game into a *cul de sac,* where the hunters easily disposed of them with spears. Ceremonial purification in the water was not practised in preparation for hunting mountain-goats, because these

animals belong not to the water but to the mountains. Continence for six days preceding the hunt was obligatory. If, starting upon the hunt, a man should forget his spear or anything else, he dared not return for it, but his wife must bring it to him, lest the goats, after coming out from their inaccessible retreats to graze, should flee back into their concealment.

This tribe lived much of the time on Owekano lake, and even in the short season they spent on salt water at the head of Rivers inlet, they were out of the usual routes of the fur traders. Guns apparently were not obtained by them earlier than perhaps 1875, although in 1792 Vancouver observed firearms in the possession of Kwakiutl tribes on the islands between Vancouver island and the mainland. A Wikeno informant born about 1854 has himself hunted mountain-goats with spear and dog. He has even seen a grizzly-bear killed with a spear, and declares that this was not a rare feat for some men, though few could accomplish it.

Elk were killed with bow and arrow by ambushed hunters past whom the herd was directed by beaters.

The duck snare (*yúhwaiyu*) was a right-angled lattice-work of split vine maple with the half of an eagle-feather tied by both ends to each interval of those sticks that ran in one direction, the feather thus forming a circle which stood out from the sticks. The snare was sunk with stones in the water near shore, and the ducks in diving for food got their heads fast in the loops. Ducks were captured also by hand when two men in a canoe screened by boughs drifted among the flock, and like other birds they were taken in hair nooses. Still another method was with a net wielded by a man in a canoe, screened from the firelight that dazzled the waterfowl.

In the herring spawning season innumerable waterfowl gathered to feed on the roe. Diving, they would come up blinded with the slimy milt, and could be taken easily from canoes. Attempting to fly away, they sometimes struck trees or rocks, and were picked up maimed or dead. Hair-seals also, lying on the bottom and feeding on the roe, became temporarily blinded with the slime and fell an easy prey to hunters.

After finishing the work of gathering herring roe, the Lekwiltok men used to engage in a contest with slings, standing on the shore and hurling stones at the wheeling gulls and ducks. There was some danger lest a stone, slipping out of the pocket before the proper time, fly

off to the right and inflict serious damage. Hence arose the custom of building stalls with drift logs interlaced like the walls of a log house, and open toward the water. These were about a man's height and ten to fifteen feet deep. In them the men would stand waiting in the early morning for the ducks, ready to greet the incoming flocks with a volley, and again at evening they would assail the departing fowl. Typical of the course of events at such times is the following incident:

One evening, the men stood throwing at the fowl. A man at the end of the row let a stone slip, and it flew among the others, narrowly missing one of them. The latter cried, "Don't throw your stones this way!" He hurled a stone at the offender, who angrily retaliated, but almost struck another man. Thus a general broil ensued, the several gentes hurriedly banding together. One man was struck in the hip as he stooped to select a missile, and a stone was sent through the cheek of another, lodging in his mouth. The quarrel ceased without other casualties.

Such disturbances were common, for the contest of throwing at the fowl was really a test of endurance, and each, no matter how weary and hungry, was loath to propose stopping for food and rest. So some one would purposely let a stone fly in the direction of the others, and thus cause a row that would break up the game.

Another form of diversion at the herring fisheries was to shoot at ducks from canoes. Two men manned a canoe, the one in the prow having a bow, ten pointed arrows, and one blunt arrow. The blunt missile was used to shoot at the duck when it came up to breathe and send it quickly below again without a full supply of fresh air. The canoe then quickly dashing up, the arrow was recovered and again used for the same purpose. Finally the fowl would become so short of breath that it was forced to come up close to the canoe, an easy mark for one of the pointed arrows. At the start each crew selected a certain duck for pursuit, and it was not permissible to give up the chase of that particular one when another chanced to present itself near at hand.

The eagle snare (*kwátsâlas*) is a hut of branches just large enough to contain two crouching men, and cleverly disguised with moss and twigs into the likeness of a rock. On the roof a salmon is fastened. When an eagle alights, the men are not to look up at once, but wait until, having eaten for a while, it is heard to breathe hard. Then a man reaches out, drags the bird in, and passes it quickly to his companion, who wrings off its head before it can scream. In the same manner other

birds such as hawks and sea-gulls are captured.

At the conclusion of this description of hunting methods it may be not inappropriate to mention some of the distinctive beliefs and quasi-religious practices of hunters.

It is believed that the spirits of all hunters of the sea, that is, those who wield the spear, become killerwhales (*Orca Pacifica*), hence nobody in his senses would think of killing one of these mammals. The spirits of land hunters become wolves, hence no wolf is killed. When anybody chances to find a dead wolf in the woods, he sits down and pretends to cry, scratching his face and praying. An informant with his steersman once came upon the body of a wolf.

We sat down, one on each side of the wolf, and pretended to cry and scratch our faces, not by moving the hands but by moving the head up and down with the elbows propped on the knees. My steersman said, "We must bury our friend." I, being a young man and ignorant of these matters, asked, "Who is going to put a blanket about him?"

"You, of course," he answered. "You are the spearsman."

I objected: "If you do the praying, you will get the luck from him and I will be out of it."

"Oh, no," he replied, "I will pray for both of us."

I took my blanket, the one I wore around my legs in the canoe, and spread it on the ground. He went to the tail of the animal and I to the head, and we pretended to lift it, and the fourth time we really picked it up and laid it on the blanket.

"Now," said my steersman, "we will say the prayer. *Wé-kasté* ['real friend'], now you have seen how kind we are to you when we find you with the spirit gone out of you. Now that the living spirit is out of you, we want that lucky part of your body to come to us, in return for what we give you. We are going to bury you. We want you to leave with us the *hwéla* [a quartz crystal found in the mountains, a piece of which every wolf is believed to carry in his right foreshoulder and which is, in reality, his life]. Leave it with us so that we may have long life [*tátamui, a* term very rarely used except on such an occasion, or when one sees a killerwhale and prays to it]. *Wa, kast* ['done, friend']*!*"

Then we lifted the wolf and put it under a rock and covered it with the blanket and with stones.

The same informant related the following experience:

In my youth I once shot a killerwhale. He was badly wounded, but in reloading I broke my ramrod, so I paddled close to him and drove

a sharp stake into him near the head. Then bracing myself in the bow of the canoe, I held the end of the stake in the crook of my legs. His spout-hole was just opposite my face, and his body stretched behind along the canoe. He spouted continually, and the stench was terrible. He drove straight toward the shore and beached himself in shallow water, and my brother came up and shot him. When the next tide floated the body I towed it down in front of the village, thinking I had done a great deed; but the old men were much excited, and scolded me angrily. They all came to the shore and prayed over the body, imploring the spirit of the killerwhale not to be angry with them, for they had not done it. Only one, they reminded him, had done it, and they mentioned my name so that there might be no misunderstanding.

It used to be the custom that when the first bear of the season was killed, the hunter would bring it to the village, and while yet a short distance away he would call, "I have a visitor!" Then all the people very solemnly and quietly would assemble in his house. The bear was placed in a sitting posture in the place of honor at the middle of the back part of the room, with a ring of cedar-bark about its neck and eagle-down on its head. Food was then given to each person, and a portion was placed before the bear. Great solemnity prevailed. The bear was treated as the honored guest, and was so addressed in the speeches. The people, one by one, would advance and take its paws in their hands as if uttering a supplication.[9] After the ceremonial meal was over, the bear was skinned and prepared for food.

On a certain night in the month of July when the tide will be at its lowest for that moon, spearsmen take their spears and watch throughout the night, waiting for a streak of light to shoot up from a star of the constellation "spearsman of heaven" to one of the "seven star" group. Then they hurl their spears at some object, in order to have good luck

9 Shaking hands was not a custom before the white people introduced it, though a man meeting a friend might grasp his hand in order to detain him. Men who had been long separated embraced each other, and women did the same; but only when there was close relationship did men embrace women, as a brother his sister, or an uncle his niece. Kissing was not a custom, but in extraordinary circumstances, as when a child had been saved from death, a parent in an ecstasy of emotion would caress it in a manner suggestive of kissing.

in their hunting. If a man finds himself threatened by drowsiness, he sets his wife to watch, and she arouses him when the flash comes.

In summer and autumn the women (and formerly their slaves) are principally occupied in gathering for the gloomy, rainy winter plentiful stores of berries and other vegetal foods. In the beginning of June those tribes that prepare hemlock bast for food (such as the Rivers Inlet group) scatter in small bands among the forest-girt lakes. The work begins about the middle of June at the time when salmonberry shoots have become too woody to be eaten and skunk-cabbage leaves have attained their full size. By means of a climbing apparatus of cedar-withe ropes and a yew block supporting the feet, a man slowly climbs spirally up a hemlock tree eighteen inches to three feet in diameter, attaining a height of as much as forty-five feet if the trunk is free of branches to that height. Then leaning out on the rope that supports the back, he cuts through the bark from the rope to a point about three feet above it. At the latter level he then scores the bark clear around the trunk, and after loosening this section he breaks it off at the level of his rope, drops it to the ground, and descends three feet to repeat the operation. A piece of whale-rib with sharpened end was the primitive tool for this work.

At the foot of the tree a woman gathers up the sections of bark, and with a mussel-shell she scrapes off the bast in shavings four or five inches long and two or three finger-breadths wide. As she works these shavings are thrown into an uncovered cedar box twelve by fourteen inches, by eighteen inches in depth, and from time to time the mass is compressed by treading on a superimposed square of scraped bark. An industrious man and woman used to prepare as much as ten boxes of bast, others as little as two boxes.

When all the bark has been scraped, a hole fourteen inches deep and three and a half feet wide, and long enough to contain the shavings, is dug. For ten boxes the pit would be perhaps five and a half feet long. Stones are heated in the excavation, and when they are white hot all cinders are carefully removed. Moist, dead fern-fronds are spread over the stones to the depth of four finger-breadths, and a double layer of skunk-cabbage leaves is carefully arranged over the fronds. A section of scraped bark is rolled into a hollow cylinder, which is inserted at the middle of one side of the pit into the moist mould, the open bottom resting on the stones. Another bark pipe is thus placed at the opposite side, the bast is deposited on the leaves, and another double

layer of leaves is spread over it. Next a mat is thrown over the mass, and a covering of earth is added. About five gallons of boiling water is poured into each bark pipe, and the upper ends are quickly stopped. All this is done early in the morning, and the mass is not again touched until noon.

The man of the family then takes his place at the side of the pit, while his wife sits at the opposite side and the children are between them. Each has a flat, rough piece of sandstone. The cover is raised, one after another quickly removes a great handful of bast, and the cover is dropped. Then each kneads his handful on the sandstone, turning and re-turning it, tearing it apart and opening it up, until after a while it becomes smooth and pasty. It is then rolled into a ball and laid in one of the boxes, and another handful is taken from the pit.

When after a week or two of this labor the family returns to the permanent wintering village, the woman cuts a mat down to exactly the shape and size of the box into which she is going to place the bast. She removes the balls one by one, lays each in turn on the mat, and beats it out with her knuckles into a loaf just the size and shape of the mat, which is then lifted and overturned on the drying frame, leaving the loaf on the frame. When the frame is filled it is placed on the drying rack just above the fireplace. The loaves are about the width of two spans (twelve inches) and the length of three, and in thickness one finger-breadth. The contents of a single box make ten loaves. During the night the fire is kept burning, and late the next day the frame is taken down and the loaves are stored in boxes made of cedar-bark scored and bent and sewed at the seams. There they are kept until the winter dance begins, when they are eaten with oulachon oil.

Red elderberries are gathered in July before they are thoroughly mature. Near each of the berry-patches there used to be a "work house," which was used in common by all the berry-pickers in the neighborhood. At the present time few parties go so far from home that they cannot return for the night. Elderberries are plucked in clusters, and when a sufficient quantity has been secured they are poured into a small canoe and heated stones are thrown in among them. No water is added, the juice of the berries being sufficient to boil them without burning. As they are stirred, the stems are loosened and thrown to the surface, and are removed. After the boiling, chests are brought alongside the canoe and the contents are bailed into them. When the berries have settled to the bottom, the liquor is skimmed off and poured into

other chests, leaving only the moist berries. Or the clusters are steamed in pits, removed to a cedar chest, and there stirred and crushed.

Then everybody eagerly crowds up to drink the juice down to the last drop, and soon all are apparently completely intoxicated, though there can be little if any alcohol in the beverage. These Indians assert that lupin-roots eaten raw produce a strong contraction of the eyelids, as if one were gazing at the sun, which continues until the taste of the roots has passed away. It is also averred that one who eats steamed black chitons (C. *Katherina tunicata*) and immediately thereafter smokes tobacco loses control of his locomotor muscles and, powerless to check himself, walks straight ahead, always toward the sea, and into the water until some one restrains him or the shock of cold water brings him to his senses. Many white men have been curious enough to experiment on themselves with elderberry juice, lupin-roots, and black chitons, but none has succeeded in producing the expected result. Yet there is ample testimony that the Indians are so affected, and the only explanation of the phenomenon is that their susceptible imagination induces a state of auto-hypnosis.

The next morning, having slept off their "intoxication," the women gather skunk-cabbage leaves, warm them so as to reduce their brittleness, and shave down the midribs to about the thickness of the lamina itself. On the ground are spread the drying frames, which are two feet wide and eight to ten feet long, consisting of flat, lengthwise, cedar strips bound at regular intervals to cross-pieces and with side strips two inches high. The frames are covered with the leaves, and four squared sticks about the thickness of a finger are arranged tip to tip in a square at the end of a frame. Berries are poured into this enclosed space, and with a shell the worker spreads them out and smooths them down into a cake uniformly as thick as the four sticks. The end stick and the two side ones are then shifted to enclose a new space, which is filled with berries; and so the work continues until the frame is occupied by a uniformly thick layer of berries in neat squares. It is then placed on the rack over the fire. After two days it is inverted over another frame; the leaves, now uppermost, are stripped off, and the second frame, containing the half-dried cakes, is left over the fire for four days, until the cakes are quite dry and brittle. They are then piled in a cedar-bark box, to be used in the winter dance.

Some of the mainland tribes, notably those on Kingcome inlet, harvest considerable quantities of crabapples, which they sell as a rare,

but to a high-born man necessary, delicacy. The green fruit is picked in bunches, with the two accompanying leaves attached. The spruce-root baskets are emptied into the waiting canoe, and when the craft is laden, the party returns home. The apples are carried into the house and poured on a mat, and the entire family pluck them from the stems, each worker with a basket at his side. Then a cooking chest is partially filled with water enough barely to cover the apples, and a loosely woven basket is set in to receive the heated stones. When the water boils violently, the basket with its stones is lifted out, and the apples are poured in rapidly, so that all may be immersed an equal length of time and be equally cooked. The addition of the apples stops the boiling, but there is just sufficient heat left to cook the apples without breaking the skin. A grill of cedar sticks, just large enough to fit inside the box, is laid on the top of the fruit and weighted down, so as to keep immersed those which, being unsound, would otherwise float. In this condition the box remains until the winter festivities. Every box of food prepared for the winter feasting is added at the end of the row of its predecessors. Sometimes as many as five boxes of crabapples are gathered by one family, each containing about twenty-five gallons. The apple harvest is finished at the time when all the sockeye salmon have gone up the rivers, that is, approximately the first of August.

About a month later, before they are too ripe to be easily handled, salalberries are gathered, the worker picking them into a small spruce-root basket suspended on the breast by a cord around the neck and pouring them upon a mat, not into a larger basket; for salalberries are too easily crushed. When a sufficient quantity has been gathered, the berries are plucked from the stems into a large basket and emptied into a low-sided cooking chest between alternate layers of heated stones. After cooking they are spread in a solid cake on a drying frame over a layer of skunk-cabbage leaves and dried above the fire. After two days the cake is turned and the leaves are stripped off, and two days later it is folded up and stored in a box.

A common practice is to dry the cooked elderberries to a crisp, crush them with a stone maul on a hide, and mix the resultant meal with cooked salalberries in order to impart piquancy to what otherwise is an insipid, sweetish food. The mixture is dried on the frames in thin sheets, which are folded up like paper and stored in boxes. This is a staple article of food and exchange. It is moistened and kneaded until it becomes a jam, which with a final touch of oulachon oil is eaten

with clam-shell or wooden spoons.

Blueberries and red huckleberries (*Vaccinium parvifolium*) are obtained in September and October by shaking the branches over a large basket. The Wikeno clean them by the awkward method of repeatedly dipping the hand into water, thrusting it down among the berries, and shaking off the leaves that adhere to it. The Qágyuhl set a board at an inclined angle and wet it. Then the berries are poured down the board, to fall upon a mat at the bottom; but the leaves and twigs adhere to the board. When the wind is strong enough the berries are winnowed. After pouring the berries into a cooking box, the women mash them in their hands and throw in hot stones. These berries are never preserved, because the excess of juice renders them difficult to dry.

Wild cherries, gathered in September, are cooked in the same manner as crabapples and are left for preservation in the water and juice in which they were cooked. Or sometimes they are well covered with oil, which, solidifying with cold, protects the cherries with a layer of grease.

The falling leaves announce the season of clover-roots. At the mouth of various streams in the moist meadows that are submerged by the spring tides a species of clover (*Trifolium fimbriatum*) grows in profusion, its roots attaining the thickness of a pencil. In such places the women own plots of ground, which have been in the family for many generations. These hereditary possessions cannot be sold nor given away; to do so would be to rob unborn descendants. If an owner does not choose to harvest her clover-roots, nobody else would touch the ground; but since roots of more than a year's growth are not tender, the ground is never idle but is either used or leased by the owner. Clover land is very valuable, because the roots, which are limited in quantity, are regarded as indispensable to good health and hence can readily be sold at a high price. For this reason the land is well cared for. The main root stocks are never taken, and such pieces as are not deemed good for food are put back into the ground. This is the nearest the Kwakiutl ever approached agriculture.

Clover-roots are dug about the end of September when the vines are withered. The primitive implement was a yew dibble two and a half to four and a half feet long with a cross-piece for the handle, upon which pressure could be applied with the abdomen. First the worker goes over the ground with a large clam-shell and cuts off the foliage and the exposed portions of the roots, for these are bitter like sun-

burned potatoes. After digging the roots she washes, cleans, and dries them, places the smaller, fibrous ones in boxes, and ties the larger ones in bundles to be sold at a higher price than the others.

There is no attempt to preserve clover-roots through the winter, but as soon as cold weather arrives any that are on hand are eaten, lest they spoil by freezing. When a clover-root feast is to be given, the woman carefully washes the roots while her husband heats stones. These are put into an empty cooking chest, and when the wood catches fire the blaze is stopped with a dash of water. Meanwhile the woman has cut an old bark basket in halves, one of which she soaks in water and lays on the stones, with the edges near the upper edges of the box. On this the wet roots are piled high and covered with a mat. Water is poured through the mat, which after a quarter of an hour of steaming sags down to a level and is thrown off. The edges of the piece of basket are grasped, and the roots are lifted out and placed on the mat. After cooling, they are served in wooden dishes, oil is poured on, and the long, fibrous roots, doubled and redoubled into a ball, are conveyed to the mouth with the fingers.

At the same season as clover-roots and in similar localities are dug the roots of silverweed (*Potentilla anserina*). These are broken into short sections, steamed, mashed, and served with a copious dressing of oil. Or the pieces are eaten without mashing, but not until they have so far cooled as to lose a slow, wormlike twisting.

Considerable quantities of "wild rice" the white, fleshy, scale-like bulbs of the wild tiger-lily (*Lilium parvifolium*) — used to be gathered in the autumn. These were steamed, mixed with hemlock bast to counteract the bitterness, and covered with oulachon oil. Since traders have made rice available at the cost of much less exertion, the lily bulbs are no longer used.

In the springtime quantities of laver of the species *Porphyra miniata* are collected from the rocks at low-tide line. Leaf by leaf the thick, heavy seaweeds are spread in a cedar box one upon another in layers about two inches thick. The layers are separated from one another with skunk-cabbage leaves and a heavy weight is placed on the entire mass. After a few days the leaves are found to be firmly compressed into cakes, which after thoroughly drying in the sun are very like a plug of tobacco in appearance, except that they are prune-colored. They are kept over winter, and even longer, and are prepared for eating by being finely cut and boiled into a viscous soup.

Other common vegetal foods are blackberries, salmonberries, raspberries, strawberries, salmonberry sprouts, eel-grass, and the roots of lupin, wood-fern (*Dryopteris spinulosa*), and bracken (*Pteris aquilina*).

Dried and smoked salmon and halibut, clover-roots, silverweed-roots, salalberries mixed with elderberries, purple laver, and oulachon oil are the staple foods without which no self-respecting family would attempt to do.

An ingenious device was that of the Quatsino Sound tribes for obtaining the valued dentalium shells at Winter harbor. A three-inch yew pole about forty-five feet long was first secured. A sound piece of spirea

(*S. opulifolia*) fifteen inches long and two inches thick was then, by bending, split into a great many thin, resilient splinters, about five hundred in number, so that when finished it resembled a great stiff brush six inches in diameter. Next were prepared several thin yew blades, equal in length to the spirea splints and three and a half inches broad, and with the corners of the lower end cut off so that it terminated in a fairly acute point. The splints were now fastened securely about one end of the pole, the yew blades were bound by the upper ends about the bundle of splints, so as to form a continuous shield of a single thickness, and near the pointed lower ends a cedar withe encircled the bundle with sufficient tightness to hold the blades and the splints firmly together. Two oblong stones, each weighing thirty-five to forty pounds, were secured on the shoulder, or upper end, of the bundle of splints, on opposite sides of the pole.

When this mechanism was put into the water, the stones just counterbalanced the buoyancy of the wood, and the pole stood upright with the bundle of splints resting not too heavily on the bottom. The fisherman, alone in his small canoe, seized the pole by the tip, raised it a few feet, and let it drop, the weight of the stones causing it to strike the bottom without too great force. The shells, fastened to the rocks by the base and with the pointed end upward, were forced among the splints, and when the pole was lifted again they were torn from the rocks. At the next plunge of the mechanism, more shells were forced in, and those of the first catch were pushed up farther. Thus it went until the resilient splints, held together by the yew blades, were distended at the bottom to a diameter of eighteen inches. The cedar-withe binding gradually slipped upward as the splints were distended.

When the "feel" of the plunger indicated that the splints were

filled, the pole was hauled up and the lower end was rolled into the canoe. The shells were combed out with a stick, and the fisherman leaned back and stirred them about with his feet, washing the mud from them. When a sufficient number had been taken, he went ashore to clean them. He placed a row between the first and the second finger of the left hand with the points upward, and then pushed a wooden needle into the small ends with a slight twist, when the contents were expelled.

The aboriginal paints of the Kwakiutl were green, red, black, and yellow. Unfortunately it has not been possible to identify the materials from which the pigments were obtained. The native description of them follows.

In the streams flowing from certain mountains were found small quantities of a hard, heavy, green substance which was pulverized by rubbing on a stone. This perhaps was metallic copper covered with rust (carbonate of copper).

Mixed with the mud of certain rivers was a red powder, which, with mud and water, was scooped up and dumped into a box. A hole in one side near the bottom permitted the water and the lighter solids to flow off, while the heavier red substance remained. On a fire of alder sticks a hearth of clean, flat stones was laid, and the material left in the box was spread on it. The alder burned so evenly and sank so gradually as not to disturb the stones, and after the substance had roasted for some time it was found to be in lumps, which were then pulverized. This probably was iron oxide.

Black paint was obtained by pulverizing a rather soft, black substance, which sometimes was found in large quantities where it had broken off from the mountain. Apparently this was coal or lignite.

Another black, moist substance, rarely found, was rolled into balls, roasted, and suddenly cooled with water, when it became a fine, white powder. This, like the other three mineral paints, was prepared for application by the admixture of a suitable quantity of moistened powder of salmon roe, which gave it adhesiveness. A user of paint kept a flat piece of limestone containing four small, round depressions, in which were his pigments.

In a few rare localities a certain fluid exudes from the rocks and collects in depressions. The surface of the little pool resembles mica, but at the bottom is a bright yellow substance, which gives a very permanent color.

When black roots or bark for weaving are required, the material is soaked in water for some months, and it is then found to have become black. For the same purpose there used to be obtained from the northern tribes a black substance, probably graphite, which imparted a duller shade than the soaking process. Commercial dyes are now commonly used.

Apparently the only native dyestuff is what is still used in coloring cedar-bark red. This is done by immersing it in a vessel of urine containing a quantity of masticated alder-bark.

There is another use for this ammoniacal liquid. In former years, and even now at certain places on the western coast of Vancouver island, every house had just inside the door a large cedar chest about three feet square and the height of a man's hips. This was a urinal for the use of male and female members of the household and their visitors, as well as any chance passer-by. Girls and young women of good birth, however, were too modest to avail themselves of this convenience. Its presence was believed to be efficacious in keeping away ghosts, and the contents were never removed until the odor became actually unbearable. When any one wished to take a thorough, cleansing bath, he would dip up a small vessel of the liquid, first stirring up the sediment, and wade into shallow water. It was used as we use soap, the body being rubbed vigorously with the ball of the hand. Face and scalp were washed in the same way, care being taken to keep the liquid out of the eyes.[10]

The common unit of linear measurement is the *pa'kl,* the reach of the two arms, which, as the Indians measure, is approximately five feet. Other units are the distance from the fingertips of one outstretched arm to the crooked elbow of the other; the handbreadth taken at the broadest part, including the thumb; the breadth of the knuckles; the breadth of one, two, three, or four fingers; the span, or the distance between the tips of the outspread thumb and fore-finger; and the distance between the tip of the thumb and the second joint of the forefinger. The longer distances can be indicated only comparatively by referring to some visible object or known landmark, or by the use of such expressions as two days' voyage, a winter day's voyage.

10 This seems to justify the coupling of the words *qéutsi* ("urinal") and *qéusi* ("to wash the head").

Although the numerous aboriginal games of the Kwakiutl are largely in disuse, they will be described in the present tense. Gambling was a feature of many of them.

Lípa resembles a simple game of cards. The requisites are forty (in some tribes fifty) polished rods approximately the size of a pencil. Among them are four sets of four each, which are variously marked with rings of red, white, blue, and black. Thus in the whole pack there are sixteen colored sticks of four kinds. Mats are spread on a floor of boards stretching along the whole side of the room and raised at the edge nearest the fire so as to present a sloping surface. The players sit at the lower side of this long platform, between it and the wall, arranging themselves in sets of four, each of which is provided with a pack of rods and plays independently of the others. Four sticks, including one of each colored suit, are thrown down upon the mat, and each player in the group of four selects one, which indicates what suit shall be his during the game. Then one player, holding the entire pack of forty in his hand, draws a rod from the centre and throws it against the mat. If it be one of a colored suit, a point is scored for the man playing that suit; and as soon as a point is counted for any other than the dealer, the deal passes to him. When the pack is exhausted, it is made up again, shuffled, and dealt, until one player has scored ten. The first two deals, necessarily resulting in four points for each player, are merely preparatory to the real contest.

An unusual form of the well-known hand-game is *álahwa*. Each player holds a wooden marker, and as the two opposing lines sit facing each other, those on one side place their hands beneath their blankets and shift the marker to whichever hand the individual elects, accompanying their actions by a wild, shrill song. At the end of the song each player of the opposing party guesses which hand of the man directly facing him holds the marker. Those who are correctly guessed are "killed," and drop out of the game for the rest of the inning, but for each of the others the guessing side must pay one of their tally-sticks. They continue to hold their inning until they have "killed" all their opponents or have lost all their tally-sticks. When either contingency occurs, the markers pass to them and the other side has an inning.

Boys play a game of similar principle called *múkwa*. One of the two leaders passes along the line of his companions, pausing a few seconds before each one. It is then the duty of the other side to guess which one has the stone maul secreted by the leader beneath the robe

of one of them. If the guess is correct, the player indicated by the guesser throws up his empty hands and cries *tsuq!* (the sound uttered by Stone in mythology). a correct guess is rewarded by a tally-stick, and the winners then conceal the stone.

But by far the most of the Kwakiutl games were athletic. Thus, *tlúmqa* is a form of amusement in which a flat cedar strip two inches wide and thick enough to be firm, yet vibrant, is thrust upright into the ground, so as to stand about a foot above the surface. The players stand some twelve to fifteen feet distant and launch at it a four-foot wooden missile consisting of a round shaft that terminates in a head six inches long and one inch square. The head just over-balances the shaft. The first player casts his club, endeavoring to strike the mark full in the face in such a way that the missile will come flying back toward him. If he catches it, he scores a point. If he fails either to strike the mark or to catch the flying club, there is no score and the play passes to one of his partners. When a missile falls beside the mark with its handle resting on the top of the upright and its head on the ground, the count is ten. Each player continues to throw until his club either fails of the mark or flies back without being caught, and then one of his partners begins. When all the missiles of this party lie beside the mark, or elsewhere on the ground, their opponents begin, first drawing out the target and setting one of their own in the same hole. Ten points constitute a game, but there are no wagers.

In preparation for *saíkyakus* ("contestants with spears out-of-doors") a very large bladder-kelp is laid under a large number of smaller ones in a shallow excavation, and the heap is thinly strewn with earth. At one end of the hole is set a small image. The youthful contestants sit twenty feet distant, and one by one rise to throw at the image sharp, hardened withes. Usually the missile goes beyond and buries its point among the kelps, when two boys waiting near at hand pull it out and throw it back to its owner, along with the kelp which it has transfixed. But if it neither strikes the image nor transfixes a seaweed, it is not thrown back and its owner is out of the game. Next to striking the image the greatest applause is won by getting the "chief" kelp.

Haíyuhuyu ("ball") is played either in the house or in a field of similar space. A ball about the size of a football and made by simply doubling up and wrapping with cords some suitable material, such as a small robe, is thrown into the air at the middle of the playground. The opposing sides stand grouped together, and all leap to get the ball as it

falls; then follows an indiscriminate struggle to force it to the end of the course and into a hole.

Kyinhyá is played between two opposing parties, each of which has one or several hoops made of roots bound with cedar-bark tape. The rings are ten inches in diameter, and the periphery is two inches wide and one inch thick. As the parties stand facing each other seventy-five yards apart, each with a leader in advance of the others, one of these two throws a hoop toward the other side, whose players rush forward and attempt to catch it on their short sticks. The one who catches it immediately runs toward the other side, whose members scatter and flee hotly pursued by the man with the hoop, who endeavors to strike one of them with it by throwing it after him. As it flies through the air, his opponents try to catch it on their sticks. In the meantime other players may have returned to their lines, and another hoop is started out to follow a similar course. The game is exceedingly disorderly and rough, the object being to make somebody cry with pain.

Wrestling is a common pastime, and so is the tug-of-war, in which the two principals hold a stout cudgel while each of their companions grasps with his arms the waist of the man in front of him. There are many outdoor games for men to the accompaniment of songs, the procedure closely corresponding to many of our garden games for children.

A form of amusement practised by girls is *kúmhla,* which resembles battledore and shuttlecock. The shuttlecock is a bit of elderberry stalk an inch in diameter and three inches in length, with three or four feathers thrust into the pith at one end. The battledore is a paddle with a blade six inches square made of cedar splints interwoven with cedar-bark cord. The object is to keep the shuttlecock in the air, and while one girl plays the others stand by and keep the tally. This is the most active game permitted to girls; indeed, unmarried girls of high birth were formerly seldom seen outside the house except when travelling. The worst thing that could be said of a girl was that she was mannish.

A pastime of young boys is *máyuqahla,* which is performed with the purpose of terminating a long season of rain. In the evening a dozen or more boys strip off their clothing and paint a white circle about each eye. Then with thumb in mouth, palms forward, and forefingers at the side of the head in front of the ears, they go in single file, dancing in a crouching manner into one house after another. Behind them walks a man, the elder brother of one of the boys, with their robes in a bundle on his back and under his own robe. He wears an old hat.

The boys constantly go through the motion of picking something from their cheeks and putting it into their mouths. On entering a house they sit down and sing, "Coming in is the hunch-back." Then all of them leap upon the hunchback and pretend to tear him to pieces, and in the confusion he disappears, leaving the clothing lying in disorder. The boys now sing: "You will not be rough when you change. Do not be rough, old grandmother West Wind, when you pull aside the hair." (By the hair they mean the clouds, and their action in tearing the robes from the man who plays hunchback symbolizes the driving away of the clouds by the wind.) At the end of the song they fall to and pull one another's hair, and then proceed to the next house. At the end of the village all put on their robes and march to the chief's house, where they knock on the door, and then stand outside and shout, in separated syllables, "We are teasing for -," here naming the chief's youngest daughter, or, if he have none, his pet dog. The people inside sit listening, and the boys continue, "Now I think it is time for you to turn about and see what is in your box." And so they proceed, calling out whatever occurs to their leaders as a hint that they desire food, and at length the people yield and invite them in. Whatever is given must be eaten, and the opportunity of a practical joke is frequently improved. A lump of suet is a favorite gift with the jesters, and occasionally bottle of whiskey is given with disastrous results. If in spite of their importunities the chief's household is not inclined to feed the boys, they finally go on through the village, singing, "They do not love their daughter!"

All personal names used by the nobility spring from earlier generations, the only newly invented ones being nicknames.[11] Prior to the ear-piercing rite and the bestowal of one of these family names, the child is known by the name of the locality of its tribe's permanent residence. Thus the village at Fort Rupert is Tsáhes, and every male child born

11 Exception must be made of those cases in which a man assumes a name taken from some wonderful object or unusual event encountered by him. Thus in 1860 a man of the Wálas Qágyuhl, while ceremonially bathing, met a white man at a small stream near the village and asked who he was. The white man answered, "Le prête," and the Indian paddled home with all speed and gave away blankets In honor of his new name, "Lupulét," which has remained hereditary in that family. In a similar manner the first Nawiti man who met Captain Cook appropriated the explorer's name.

of Fort Rupert parents is known as Tsáhes, while every female infant is Tsáheska (*-ka* being the feminine suffix). The common people have only nicknames based on some peculiar characteristic or circumstance.

Not infrequently names applicable to either sex are bestowed upon unborn infants. In any case, however, the child bears the local place-name until on the fourth (formerly, when head-flattening was practised, the eighth) day there occurs the ceremony of piercing the ears and formally bestowing a personal name belonging to the father's family. Usually this is one that has been left available by death, but occasionally a grandparent, or even a father, confers one of his unused names on the infant. When this ceremony (*ôta*, ear-piercing) is to be held, heralds pass through the village, entering each house and summoning each person by name: "Come, let us go to see the ear-piercing!" When all have assembled, a woman, whose profession this is, pierces the lobes of the child's ears with a bone point, a course which is believed to ward off sickness. Then the father announces the child's name and distributes gifts among all those present, the usual amount being the equivalent of twenty-five cents, although fifty cents or even a dollar may be given to each person if the giver is very rich. The ear-piercer of course receives a more considerable reward.

Within a week or two after the ear-piercing the father may declare his intention of giving his child a new name, by arising at some feast and announcing, "I am going to give my child a covering!" Then his clansmen rise and join him in one of his songs. Within a few days he assembles the people and distributes gifts of the value of about fifty cents to each, while the paternal grandfather brings out the infant and puts it through the motions of a dance, the chief of the gens having announced the new name and recited the story of its origin and the great deeds associated with it.

Generally, however, the first name is retained until the age of ten months, when, on the occasion known as *héhluqila,* all the young people of the child's sex are invited to the house to observe the father or an uncle singe its hair in order to cause a luxuriant growth. Its head and face are then dusted with powdered red paint, and the father distributes gifts and announces the new name. Then the guests cover their faces with red paint, and one by one sing their love-songs, all aiding each singer.

The child is now regarded simply as the son or the daughter of its father, and not as a tribesman. The manner of its reception into the

tribal organization will be described later.

Until about the middle of the nineteenth century artificial deforming of the head was general among the Kwakiutl, while the tribes of Quatsino sound carried the practice to the greatest extremes. On the fourth day after a child's birth came a woman whose profession was that of head-binder. After anointing the infant's head with silver-perch oil, she wrapped tightly about it a two-inch strip of deerskin or of thin, dry kelp. The baby was then laid in the cedar-box cradle on a grill of cedar splints covered with soft, silky, cedar-bark floss. A pad of floss was bound tightly over the forehead, and other pads were stuffed into the space between the temples and the sides of the cradle, the purpose being to produce a straight line from the tip of the nose to the crown of the head. It was regarded as little less than disgraceful for any one, especially a woman, to have a depression where nose meets forehead. The baby remained almost constantly in the cradle with bandage and pad in place. Infants, it was thought, should not be taken out-of-doors lest they acquire a wild, roving disposition. So a cedar sapling with a straight, resilient branch was planted inside the house, and, suspended from the limb by two ropes, the cradle was kept swinging incessantly. After about two weeks the head-binder removed the bandage, oiled the skin, which, especially if the bandage had been too long in place, was apt to be raw, and adjusted a wider binding. Thus the process continued for about four months, the width of the bandage being gradually increased as the head grew longer. The growing skull had a tendency to bulge out over the binding, and whenever this became noticeable the head-binder placed cedar-bark floss beneath the bandage and the depression filled out. At the end of four months the head swelled large and round above the place of binding, but the irregularities gradually vanished and the skull assumed a rounded, elongate shape considerably different from the deformed skulls of the Salish and other southerly tribes, who used only the pad and not the bandage. While no diminution of intellect is observable in those whose heads are deformed, it is said that infants just released from the bandage and pad were as helpless as month-old babies now are.

The mortuary customs of the Kwakiutl and their beliefs concerning the dead are full of interest. The wooden box containing the corpse is placed either in one of the group of small huts (the so-called "grave houses"), in a canoe, in a dry and inaccessible cave, or high up in a spruce tree. Exposed thus to the air, corpses rarely undergo putrefac-

tion, but slowly mummify. The houses and trees used for this purpose are always near the village, frequently on a small and otherwise unused island, and invariably facing the water. Burial in one of the tribal cemeteries used to be regarded as almost indispensable, and even if a hunter met death on a remote mountaintop his relatives would recover the body. The coffin is so placed that the head of the corpse is toward the west.

One whose death is expected is carried out of the house and kept in a temporary hut of boards and mats, in order that the rest of the household may not be exposed to the evil consequences of contact with the dying. This course, which is promptly resorted to when any apparently serious malady refuses to yield to the usual treatment, is in itself practically a death sentence, so susceptible to suggestion is the primitive mind. Rarely indeed does a patient leave on his own legs one of these miserable kennels.

The coffin is a cedar-board box three and a half feet long, two feet wide, and three deep. For one whose death is awaited, the coffin is made in advance by a man who has lost a wife by death; and at the same time a cedar-bark rope for binding the coffin is prepared by a woman who is, or has been, a widow. It is thought that if a rope made by a woman who has never been a widow were to be used for this purpose, she would "bind the life of her husband in the coffin." But there is no such misfortune in store for the husband of a former widow. A similar conception causes the use of a coffin manufactured by a widower. The articles must be new. Thus, if a rope that has been employed in fishing were to be bound about the coffin, the next season's catch of that particular species of fish would prove a failure. When death occurs unexpectedly, a new storage chest serves the purpose of a coffin.

If life passes in the night, the knowledge is confined to the members of the family until the first streak of dawn, when their lamentations apprise the villagers that death is among them, and everybody hurriedly arises; for it would be inviting death to sleep in daylight with a corpse in the village. At any other time than night, however, preparations for burial are begun without a moment's delay. Even if it is so late in the afternoon that the rites cannot be completed before the fall of darkness, the body is hurriedly wrapped and bound in a robe, placed in the coffin, and carried beyond the end of the village, to be left until morning on the beach above the line of high tide. One shudders to reflect how many people among these tribes have been buried alive,

or at least hastened to their end, stuffed into the coffins as they are, frequently with broken necks, as soon as consciousness leaves them.

As soon as the death wail is heard, a number of *aáphila* ("*care*-takers"), whose services have previously been engaged by the family, assemble at the hut in which lies the corpse. These are unmarried persons (at least temporarily so) of the same sex as the deceased, and their number varies from two to eight, depending on the wealth of the family employing them. In the case of very poor families their work is performed as an act of charity. As the body has been bathed just before death ensued, the first act of the *aáphila* is to blacken its face with charcoal and to cover its head with a small blanket, which they fasten with wooden pins. They wrap the body in a new robe, and adorn it with the best of the decedent's finery. To employ a used robe would be equivalent, figuratively, to burying with the corpse any one who has worn it. The practical result would probably be little different, for the threatened victim would almost certainly worry himself into an early grave. The last act of any attendant who finds it necessary to come in contact with the skin of a corpse is to brush gently over the touched parts of the body with a bunch of cedar-bark floss, in order to rub off the touch of his own hands; lest, if this be permitted to remain and be buried with the dead, it decay as the body decays, and the attendant himself soon die.

Fully clothed and wrapped in the robe, the body is lifted by the *aáphila* and with three preliminary motions is placed in the coffin on the small of its back, the knees being drawn up to the chin and the hands to the breast below the shoulders. Some of the decedent's more valuable personal possessions are placed in the chest, and the unoccupied space is packed tight with blankets. If there has been time to make a special coffin, the body may fit in without the head being pressed down, but frequently the head has to be pushed sharply down and forward, until the spine cracks and the head hangs forward on the breast. The lid is then adjusted, and two men working at each corner busily lace it down with cedar withes. But if darkness is approaching, four men work at each corner in order to finish the task before night. At a funeral everything is carried forward with great haste. While the body is being prepared, all the people gather outside the hut, and as they sit there in groups commenting on the proceedings, some of them in even, unemotional tones offer advice to the *aáphila,* reminding them of anything omitted. The coffin stands outside the hut, and the

process of putting the body into it goes on in full sight of the people. The closer relatives of the deceased weep and wail, and pay no attention to what is being done.

After the coffin is laced shut, the *aáphila* invert it and crack the bottom, in order that the ghost may have exit. Then they place two boards across the gunwales of a canoe and on them the chest. Many, sometimes nearly all, of the men embark in their canoes and accompany the*aáphila,* in order, ostensibly, to lend assistance, but women never go. If the coffin is to be hung in a tree, two men in a small canoe have gone in advance and selected the tree, and thinned the branches by means of an adze, so as to make an opening for the passage of the chest upward to the boughs on which it is to rest. A young man with a stout rope now climbs to two branches on the same level and fairly close together, and if the old men below approve his selection, he cuts off the ends of the boughs, leaving the stubs somewhat longer than the width of the coffin. Another youth climbs into the tree and by means of the rope these two draw up one of the two boards brought in the canoe with the coffin, and they lay it across the two branches and bind it to them. Then the two, one above and one below the platform, leaning forward across stout branches, draw up the chest and place it on the platform. The second board is then bound on the top of the coffin, and a skin is draped over the whole and lashed down. Formerly, when coffins were painted with conventional figures, the skin was not used. Finally the chest itself is secured to the tree. After finishing their work the two men descend, carefully cutting off every branch close to the trunk, so as to protect the body from violence or robbery at the hands of hostile people. These elaborate precautions are observed only in the burial of persons of rank.

If the decedent was a high chief, everybody then moves to a distance of a hundred yards from the tree and sits down, while songmakers compose memorial songs celebrating the life and deeds of the dead man, and after learning them, all embark and return to the village, singing the songs and comporting themselves like invited guests from another tribe. They find the chief's house alight with a huge fire, and prepared for their reception. The canoes draw up to the beach, and the older chiefs who did not accompany the funeral party stand in front of the house and address the returning band as if they were guests from some other village. These reply: "We have brought the chief. We knew he would not stay long." The reference is to the son who will succeed

his father, although he has not accompanied them, but with the other members of the family has remained at home weeping. Those drawn up on shore express their satisfaction with the news, and invite the returning party into the house. Inside they repeat the memorial songs, which number either four or eight. One song records the names of the coppers the dead chief owned; another mentions all the potlatches he had given; a third all the great feasts he had made and the canoes he had then broken up and used for fuel; another names the winter dances he had held and the amount of property he had on such occasions received from his fathers-in-law, and how many times he had given property to his own son-in-law in order to enable him to hold a winter dance. These are the usual four songs, and they are sung in this order. But if the chief was a very great man, eight songs are composed, the additional ones telling the history of his family crest and mentioning the names of former great chiefs of his line.

The singing of eight songs of this character occupies a long time and is very fatiguing. The leader chants a line, and the assembly repeat it, beating with batons on a roof-board which lies before them and maintaining a peculiar rhythm of two quick beats followed by a long rest. A few of the women come in and sit by, but they do not sing; most of them remain outside wailing. Rarely, when a woman of very high rank has died, the women are invited to sing a song by themselves. If there is abundance of food in the village, the people bring modest quantities and eat in great solemnity.

On four successive days the men assemble in the house of the deceased chief and repeat the memorial songs. On the final day the singing is followed by a distribution of gifts on the part of the heir. Having called in all credits due his father, the young man (or if the heir has not yet arrived at puberty, a relative representing him) has the blankets and other articles that comprise the estate ostentatiously piled up where all may behold them.

At the conclusion of the singing four chiefs arise, and one by one repeat the formula: "We would like to ascertain what has become of our chief. We would like to know into what he has been transformed."

A chief among those sitting replies, "Proceed; try to find out!"

One of the four shakes a rattle, while the other three stand beside him, and he says, "I am going to try to have our chief show himself for a moment."

"Proceed!" shout the crowd.

Then, shaking the rattle and gazing upward, he sings: "Come back; come down to us for a while!" At the fourth repetition of the words there is heard far back in the woods a sound like the call of a trumpet.

One of the three cries: "Our chief [the singer] has caught what he wanted! I told you he was wonderful!"

The audience respond: "We know it! He has supernatural power!"

The sound approaches until it seems to be at the end of the house. Then the leader begins a supposedly extemporaneous song running somewhat in this strain: "Now we will shake off our grief; we will drop our sorrow."

At the same time a curtain at the rear of the room is raised, and a masked figure representing the mythical ancestor of the family is seen dancing. The mask is one that is kept in the family for such occasions as this, as well as for winter dances, and it is worn by a man hired by the heir. When the masked figure is revealed, all the people rise, feeling that sorrow is gone, and they gird up their robes as an indication of their intention to resume their normal activities. With the ending of the song the dancer disappears.

Then the young chief, standing in front of the house, announces in a loud voice that with the blankets and other property inside he will now buy his father's rank and seat in the tribal organization.

Inside, the people join in singing the dead chief's potlatch songs, and then the *tákumi* (the official distributor) of the gens holds up in the sight of all the first blanket to be given away to the principal personage of the tribe, while the speaker, standing beside him, recites the history of the family and finally declares that the young man has taken the place of his father. Then follows the distribution of the presents.

On the morning of the fourth day after her husband's death, a widow goes to live in a little hovel in the woods a short distance from the village. The hut is prepared on the evening before by men who have lost wives by death, although they are not necessarily unmarried at this time. It is made of boards taken from the hut in which the husband died, and is walled in with old mats. No attempt is made to render it comfortable, and there is barely space for her to lie down.

Before the crows begin to caw the widow retires to her isolated shelter in company with a female attendant, whose profession this service is, and her mother or other nearest female relation. They repair at once to a near place where water can be had, and the attendant builds a fire and heats four stones. These she drops into a pail of water,

and when it is warm she places on the widow's head four handfuls of water. The widow then bathes with the warm water. On the preceding day the attendant has prepared a hoop by braiding green hemlock boughs, and this she now holds while the widow puts first her right arm and right leg through it, then the left arm and left leg, thus passing her body entirely through the hoop. The attendant, still holding it, pivots to the left so as not to bring the hoop between them, and then holds it again in front of the widow, who as before passes her body through the hoop. Twice more these acts are repeated. They remain there until the woman's hair is dry, and she then follows her attendant to the hovel, in which she sits on a pile of white-pine boughs.

She is left there alone with a second attendant, the oldest woman in the village. She is not permitted to cry, to grieve, to speak, except that when it is absolutely necessary to communicate she may whisper to the old woman. She eats only when it is to be supposed that all the people of the village have finished their meal. The old woman then kindles a tiny fire and prepares a little food, giving her charge four mouthfuls of food and four swallows of water morning and evening. Every fourth day the bath and the use of the hoop are repeated, and on the other days the widow remains in the hut. This continues until she has had four baths, and at the end of this period the few utensils that have been used are left there, and the hovel itself is demolished and left in ruins. The hemlock hoop is hung on a branch; the hat which she has been wearing to prevent subsequent soreness of the eyes is hung on the top of a stump; and the robe is wrapped about the same stump. On the last day of the purification the attendant brings new garments, so that when the widow returns to the people she will have on nothing which has been in the hut of purification. If the hovel were not broken down and left on the ground, some relative of the woman would soon die. Why the hat and the robe are placed on a stump is not certainly known. It seems plausible that this was done to deceive the husband's ghost, which, should it return for the woman, would mistake the stump for her.

When the widow returns to the village, a board is removed from the house, and by this way she enters the little bedroom she is to occupy. A robe is hung up before her, and there she remains, eating the same food as the others but not in the common room with them. On the eighth day she goes out to some convenient place and bathes in fresh water, and this is repeated thrice more at intervals of eight days.

Always she leaves and enters by way of the removed board. At the end of this period she can come and go like others, and she is permitted to weep for her husband; but another marriage is not (or formerly was not) to be considered within less time than a year. For a full year after the death of her husband, she may not eat fresh fish nor fresh meat, for such a course would cause skin disease.

The same process of purification is prescribed for widowers. But either widows or widowers without children are permitted to observe a shorter ceremony, in which they bathe and pass through the hemlock hoop but do not live in the woods nor remain secluded in the house at the end of sixteen days. The longer course is called *súmsila,* the shorter *kwákwahsâla.*

Quite generally women scarify the cheeks by pressing against them the tips of the fingers (not the nails), with elbows on knees, and slowly moving the head up and down. Friction gradually rubs off the skin. But on Quatsino sound the cheeks are cut with bits of clam-shell, and at Rivers inlet the only outward manifestation of mourning is the shortened hair.

The Kwakiutl share the common Pacific Coast belief in a world where the spirits live in villages like those of earth, and engage in the same pursuits as human beings, save that things are shadowy and unreal, and day is night. This world, which does not seem to be definitely located, is reached on the fourth day, when the soul is initiated into the tribe in a great dance of the spirits.

The Nimkish tribe, and probably others, believe that each person has a guardian spirit inhabiting the body of an owl, and that if an owl be killed some one, left unprotected, will soon die.

The following dream experience of a young Lekwiltok who, seriously ill, became unconscious just after sunset and therefore too late to be buried until morning, illustrates some phases of the conception of the spirit world.

While the body of Yáhniqulus lay there dead, his spirit sat on the riverbank and observed a canoe coming upstream. It touched the shore, and one of the men in it said: "Come! You are the one for whom we have come." The young man embarked, and the canoe, unpaddled, moved toward Tékya, his native village. He saw all the familiar places he had known. He had forgotten none. It was a fine day. In the spirit world the light is not like sunlight, but more resembles the flash from a shining surface.

As the canoe passed through the narrows [Seymour narrows], two men sitting on the precipitous rocks on the western side hailed them, "Come and take us in!" But the canoe turned to the right, and one of the spirit men explained, "Those are drowned men, and with such we have nothing to do."

Near Bear river two other men on shore asked to be taken aboard, and the canoe turned toward them and took them in. Yáhniqulus recognized one of them as Qúnhwulahl, but the other, who had a blackened face, he did not know. Near Tékya he saw many houses, but no smoke issued from them; for in this village of the dead all the spirits were in the dance house. They went ashore and into the dance house, which was filled with a cloud of eagle-down, like fog, and some of this the young man breathed into his throat, which caused him to strangle. Though it was a very large house, it was nearly filled with people, some of the men carrying children but unaccompanied by wives, and some of the women being without husbands.

To Yáhniqulus his companion Qúnhwulahl said, "Pivot on your right foot, and then walk around the fire; but when you come behind the fire pivot again on the right and then go on around the fire." As soon as they came inside, the ghosts began to strike their batons on the sounding boards, and the noise was deafening. Qúnhwulahl said to his friend, "The third time they beat, go around the fire and turn as before, but when you come again to the door, run out and I will keep them from catching you."

So this the young man did, and he was followed out of the door by the black-faced man and by Qúnhwulahl. These two, when the pursuing ghosts came close, would turn and block the narrow trail.

Yáhniqulus at last found himself alone on a promontory. He sat down beside a large stone, and, thinking of his parents, he wept. He heard something whistling through the air, but he would not look up. After a while he raised his eyes and saw a great white bird perched there gazing at him. Something put it into his mind to go and lay himself on the bird's back, clasping his arms around its neck, and it ran forward on the ground, then rose slowly and heavily. Higher and higher it went in a great ascending spiral, and at last it perched on the top of a mountain. When Yáhniqulus got off, the bird flew upward until it was out of sight, and he wept and wept. Then he looked about. He could see his people's camp, but there was no way to cross the water.

As he wept, he heard the same whistling noise, and soon the same

bird alighted. Quickly he got on its back, and it flew away with him across the water to the top of another mountain, where it left. The young man looked down a great straight road leading to the camp. He ran down it, and soon passed two trees close together, bent with the weight of owls, which were the spirits of the dead. Then he saw a small house straight ahead, but a long distance away. Nevertheless he soon reached it. There was a small stream, and a man was walking along the bank. Said the man: "Be very careful! When you jump, be sure to lean clear across, for if you fall into the water you will never go back. That is why I am here, to warn people about this. Here is where they fail, those who die and never come back." Yáhniqulus drew back, ran forward, and leaped far across. Then he went straight on to the camp. He entered the house and went to bed.

At dawn he awoke and heard a woman weeping. His body was wrapped and bound as if for burial. Said he: "Tell my mother not to weep. Give me some water; I am thirsty." Some one brought water and he drank. He was alive again. He beheld his mother and his father. Then he related his experience in the spirit world, and not long thereafter the two men who had helped him escape died.

Most of the religious conceptions and practices of the Kwakiutl are so inextricably bound up with the daily routine of their ceremonies, their hunting, fishing, and sorcery, that they may best be understood through a study of these various activities. The Kwakiutl seem to have no conception of a personified, supreme power; rather, there are many spirits — some inhabiting animal bodies, others purely spiritual — which can and do impart supernatural power to men who obtain their pity by austere bodily purification. *Kékala* ("giving up"), as the rite of purification is called, is almost obsolete. It was practised by young men desiring to obtain supernatural power in hunting or in any other profession, as well as by hunters themselves just before going out for game. Contrary to the custom of many Indian tribes, not all young men of the Kwakiutl observed this rite, because of its severity. The most rigid observance of the rules demanded continence for ten months, partial fasting, and standing in icy water morning and evening while rubbing the body vigorously with four bunches of hemlock tips until the skin became sticky with the exudation from the exposed dermis. This last act could not of course be performed every night and morning, because sometimes the skin would be too sore to touch, but as soon as possible the rubbing was resumed. All this was done in order

to remove the human odor, which is extremely offensive to the spirits. For the same reason many foods were absolutely taboo; such were seaweed, spawn, berries, and the roots of silverweed and wild tiger-lily. Copper was not to be touched, nor were the dead to be approached. Little sleep was the rule, and little speech. Necessary conversation was carried on in a whisper. The hair was tied at the nape of the neck, and below that it fell in a bushy mass down the back. Most of the time was spent in the woods, only occasional visits being made to the house, because exposure to tobacco smoke gives the body a strongly human taint. Usually the period of purification was four months. Spirits sometimes appeared ocularly, but usually only the voice was heard by the sleeping devotee. Whatever happened, he kept it a secret.

Verbal supplication addressed to a definitely personified deity is very rare. When the waves threaten to capsize a canoe the steersman prays to the sun: "Look down on us, Chief! I beg that you be with us and take us across!" Then he answers himself, "*Ho!*" and assures the people, "He answers that we will cross in safety." When they land successfully, he says, "Thank you, Chief, that now we reach shore alive!" If among tide-rips the canoe has difficulty in rising, the steersman prays to a certain small duck which in flying skims over the water, and now and then touching the surface seems to rebound from it: "Dive under us, Summer-bringing Woman, for there is nothing in this canoe you want." Then he answers himself with *Ho!* or *Wo!* or *Wa!* and assures the people that he has received a favorable reply from the duck.

The steersman, always an old man of long experience, carries a small box containing charms, prominent among which are a piece of false hellebore (*Veratrum viride*) and a bunch of shredded cedar-bark containing menstrual blood. In bad weather he lets either one or the other float astern in order to ward off danger and especially the sea monster *yákyim* ("evil thing"), a quasi-mythological shark which is always following a canoe in stormy weather, waiting hungrily for it to capsize.

Places where a precipitous rock overhangs the water are called *númas* ("old man"), and, being especially dangerous in rough weather, they are always supplicated by the steersman, when it is necessary to pass one of them, with such words as, "Númas, put your hands on the sea and press it down!" Thus he continues to pray, standing in the stern, until the place is safely passed; then he turns his head and says, "Thank you, Númas, that we passed safely."

No prayers are addressed to the moon. An eclipse, which is called *núkuq* ("swallowed"), in the belief that some creature swallows the moon or the sun and then disgorges it, causes great excitement. About the year 1900[12] an eclipse of the moon was visible at Fort Rupert, and Páwili, the oldest man of the village, was aroused. "Is it all swallowed?" he inquired. They said it was not, and he declared, "Then I will make him vomit it!" He ran outside where all the people had assembled, ordered them to build a fire, and each person to throw into it some portion of his clothing or hair. Then he began to sing over and over, while the people, as they caught the air, joined in: "Vomit it, vomit it, or else you will be the younger brother of Páwili!" The old man danced slowly around the fire. After a while he called, "Is he vomiting it?" When the moon reappeared, he said proudly: "I made him vomit it! Now he is still my elder brother." A great quantity of old clothing, such as cedar-bark blankets, was burned, the purpose being to make such a great smoke as would rise to the heavens and coming there into the nostrils of the creature which was swallowing the moon would cause it to sneeze and disgorge the luminary. Many years ago when there was a total eclipse of the sun the same thing was done, but there were three men who danced and sang, commanding the creature, under pain of becoming their younger brother, to disgorge the sun.

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12 Total eclipses of the moon were visible at Fort Rupert, December 27, 1898; December 16, 1899; October 16, 1902.