1-1-1888

Picturesque California and the Region West of the Rocky Mountains, from Alaska to Mexico.

John Muir
The great wilderness of Alaska, with its lofty mountains laden with glaciers and snow, its deep in-reaching fiords and flowery plains, and its boundless wealth of evergreen forests and islands, and shining, singing waters, offers a glorious field for lovers of fountain beauty, much of which is now within easy reach of the ordinary traveler.

The trip by steamer from Puget Sound to the head of the Alexander Archipelago is perfectly enchanting. Leaving scientific interests entirely out of the count, no excursion that I know of may be made into any other portion of the wilds of America where so much fine and grand and novel scenery is so freely unfolded to view. Gazing from the deck of the steamer one is borne smoothly over calm blue waters, on and on through the midst of a thousand islands densely clothed with well-watered evergreens. The common discomforts of a sea-voyage are not felt, because the way is through a network of sheltered channels that are usually about as free as rivers are from heaving waves, and were it not for the brimy odor in the air and the strip of brown alge seen at low tide on either shore, it would be difficult to realize that we are sailing on salt ocean water; we seem rather to be tracing a succession of inland glacier-lakes. Day after day we float in the heart of true fairyland, each succeeding view seeming more and more beautiful.

Never, before making this trip, have I found myself embosomed in scenery so hopelessly beyond description. To sketch picturesque bits definitely bounded is comparatively an easy task—a lake in the woods, a glacier meadow, a cascade in its dell, or even a grand mountain landscape beheld from some clear outlook after climbing from height to height through veiling forests, these may be attempted and some picture more or less telling made of them; for in them we find place for beginnings, starting from which we may make efforts that we may hope to conclude. But in this web of scenery embroidering the northern coast there is such indefinite expansiveness, so great a multitude of features without any redundancy that may be slighted or left out, so varied and at the same time so similar, their lines graduating delicately into one another in endless succession; while the whole is so fine, so tender, so ethereal in light and shade, that any pen-work seems coarse and
unavailing. Tracing the shining ways through sound and strait, past forest and waterfall, island and mountain and far azure headland, it seems as if we must surely at length reach the very paradise of poets, the abode of the blessed.

Here you glide into a narrow channel hemmed in with mountains that are forested down to the water's edge. There is no distant view, and the attention is held to the objects close about. The forests are closely planted like a field of wheat, the steep slopes on which they are growing permitting almost every individual tree to be seen rising above one another like the individuals in an audience,—the blue-green sharply tapered spires of the Menzies spruce, the warm yellow-green Merten spruces with their finger-like tops all pointing in the same direction or drooping gracefully like leaves of grass, and the airy, feathery brownish-green Alaska cedar, blending in harmony; lichens and mosses on the branches, a fringe of bushes along the shores. Gaps of paler green are seen where winter avalanches have cleared away the trees and on the higher summits, revealing hollows with snow in the shadows, the fountains of ancient glaciers, and short steep glens carrying cascading streams that are mostly hidden beneath fringes of dogwood and alder, showing white here and there where they leap sheer mossy cliffs, or unseen until they emerge on the brown algae of the shore. Perchance a few ducks shoot past over-head, a bald eagle may be seen leisurely dressing his feathers on the top of a dead spar, or a loon is heard uttering its intensely lonely cry, all the scenery being made up of wildness as closely shut in and withdrawn as the wildness of mountains.

In the meantime the steamer may be so near the shore that you may almost reach the purple cones of the spruces as you pass. But new scenes are brought into the view with magical rapidity. Rounding some bossy cape the eye is called away into far-reached vistas bounded by finely curved headlands in charming array, one dipping gracefully beyond the other and growing fainter and more ethereal in the distance. The tranquil channel up which you are sailing stretches river-like between, stirred here and there by the flashes of leaping salmon that rise a foot or two above the water like vivid jets of silver, and by flocks of white gulls that float like lilies among the sun-spangles; while the cool white sunshine, sitting over all, blends sky, land and water, in pale misty blue. Then, while you are gazing with vague, dreamy longing into the depths of this leafy ocean lane while the cool white sunshine, sitting over all, blends sky, land and water, in pale misty blue. Then, while you are gazing with vague, dreamy longing into the depths of this leafy ocean lane, the steamer, turning into some hitherto unseen passage, glides through into a wide expanse, a sound filled with islands sprinkled or clustered in forms and compositions such as only Nature can invent. Some sheer-faced, plunge abruptly into the blue prairie of brine; others are rounded off in smooth convex brows, or with hollow curves terminate in level points tipped with sedge. Some are so small that the trees growing on them seem like mere handfuls culled from the neighboring woods and set in the water to keep them fresh, while here and there at wide intervals you may notice a bare detached rock just above the water, like a black dot punctuating the end of a full outs说明ing sentence of islands, every line of which is reflected in the mirror water, form and meaning duplicated.

The variety we find, both as to the contours and collocation of the land masses in the green archipelago, is due mainly to differences in the structure and composition of the rocks out of which they are made and the unequal amount of glaciation different portions of the landscape have received, some sections having been deeply chiselled by the influx of large, steeply inclined glaciers from the mountains of the mainland. Especially heavy was this influence toward the close of the Glacier Period, when the general ice-sheet, moving in a direction nearly parallel with the trend of the coast, was beginning to fail, allowing the local glaciers from the mountains to push farther out to sea. And again, the higher mountains of the islands nourished small lingering glaciers which sculpured around their summits and sides, giving rise in some instances to amphitheatres of considerable size with canons or valleys leading down from them to the sea. These causes have produced much of the obscuring variety of which Nature seems so fond, but none the less will the studious observer see the underlying harmony, the general trend of the islands in the direction of the flow of the ice-sheet, nearly parallel to the coast-line where the influence of local glaciers from the mainland was light, and in an oblique direction where the local influence was the greatest. Furthermore all the islands, great and small, as well as the headlands and promontories of the mainland, are seen to have a rounded, over-rubbed appearance, a finish free from angles, produced by the over-sweeping ice-flood during the period of glacial abundance, delicate complying harmony being everywhere apparent in broad generalizations.
The canals, channels, straits, passages and sounds are of course subordinate in size and trend to the same forces as the land-masses and differ from them only in being portions of the general pre-glacial margin of the continent more deeply eroded and covered with the ocean waters, which flowed into them as the ice was melted out of them. Had the general glacial degradation been greatly less, then these ocean-ways would have been valleys, and the islands bounding them would have been rounded hills and ridges, forming landscapes with undulating features, like those found above the sea-level wherever the rocks and glacial conditions have been similar.

The extension of the domain of the sea in connection with glacial action has not yet ceased in Alaska. In many a mountain-walled fiord of the mainland the advance of the waters may still be seen, beating against the crystal fronts of the glaciers, pressing slowly inland and taking possession inch by inch, century after century, as the shrinking glaciers withdraw in compliance with conditions of climate slowly changing.

In a general way these inland-bound channels of the Archipelago are like rivers, not only in separate reaches as seen from the deck of a ship but for hundreds of miles in the case of the longest of them; the tide-currents, the fresh drift-wood brought down by avalanches, the inflowing tributary land-streams and luxuriant over-leaning foliage of the banks making the resemblance all the more complete. But their courses are more direct than those of rivers, because of the steadiness of the flow of the ice-sheet of which they were born.

The largest of the islands are continents in effect from whatever direction they may be viewed, but far the greater number are small and appreciable as islands, hundreds of them being less than a mile in length, dotting the shining levels in perennial beauty. In their relations to each other the individual members of a group have evidently been derived from our rock-mass, yet they seldom seem broken or abridged in any way as to their lines of contour however abruptly they may dip their fronts. Viewed one by one they seem detached beauties, like extracts from a fine poem, while from the completeness of their lines and their individual ornamentation with trees, each
seems a finished stanza in itself. In contemplating the arrangement of the trees a distinct impression is produced of their having been sorted and harmonized as to size and correlation like a well-balanced bouquet. In some of the smaller tufted islets a group of tapering spruces is planted in the middle, and two smaller groups corresponding with each other are planted on the ends at about equal distances from the central group. Or the whole forms one group with marked fringing trees that match each other, spreading around the sides like flowers leaning outward against the rim of a vase. These harmonious relations in the island woods are so constant that they evidently are

"Gazing from the deck of the Steamer one is borne smoothly over calm Blue Waters."

the result of design, as much so as the arrangement of the feathers of a bird or the scales of a fish. Thus thoughtfully beautiful are these blessed islands, and their beauty is the beauty of youth. For though the freshness of their verdure must be attributed to the copious moisture in which they are bathed from the warm ocean current coming from the sunny fountains of Japan, the portion of the Japan current that bathes these shores is itself young; while the very existence of the islands, their features, finish, and peculiar distribution, are all immediately referable to the creative action of flowing ice during the great winter of the Glacial Period just now drawing to a close.

The first important stop made by the Alaska steamers after coaling at Nanaimo, Vancouver Island, is usually at Fort Wrangel, the distance between the two points being about six hundred miles. The town of Wrangel is situated on Wrangel Island, near the mouth of the Stiiken River. It is a miry, dilapidated, forbidding place, but has many advantages, particularly as a center from which excursions may be made to some of the most interesting portions of the country. Its grim boulder-like huts and houses, varying wildly in size and shape, are built in a wrangling, angling fashion around the boggy shore of the harbor for a mile or so, without manifesting the slightest subordination to the points of the compass or to building laws of any kind. Stumps and logs block the two crooked streets of the settlement, each stump and log, by reason of the dampness of the climate, moss-grown and grass-tufted on the top, but muddy and decaying at the bottom where the hogs, which do most of the street work of the place, have dressed against them. These picturesque obstructions, however, are not much in the way, as no wheel of carriage or wagon ever turns here. At the time of my last visit there was not a horse on the island.

Indians, mostly of the Stiiken tribe, occupy the two ends of the town, the few whites the middle portion; but there is no determinate line of demarcation between them, the dwellings of the natives being mostly as large and as solidly built of logs as those of the whites. The fort is a quadrangular stockade with a dozen block and frame buildings located on rising ground just back
PICTURESQUE CALIFORNIA.

OLD FORT WRANGL.

of the business portion of the town. It was built shortly after the purchase of Alaska in 1867, but in a few years was abandoned and sold to private parties. Wrangel is a tranquil place. During a residence of several months I never heard a noisy brawl among the people, or a stormy wind in the streets, or a clap of thunder, or anything like a storm-sound in the waves along the beach. During the summer the abundant rains come straight down into the lush vegetation steamy and tepid. The clouds are usually united, filling all the sky, not racing in threatening ranks suggesting energy of a destructive kind, but settling down in the form of a bland, muffling poultice. The clear days are usually intensely calm, gray and brooding, inclining one to dreamy meditation. The islands seem to float and drowse on the glassy waters, and in the woods every tree is at rest. But the very brightest of Wrangel days are not what Californians would call bright, for the sunshine is tempered in sifting through the moisture-laden atmosphere, preventing glare and dazzling brilliancy except under rare conditions. After sunrise a few smoke columns may be seen rising languidly to tell of the first stir of the people. Then an Indian or two may be noticed here and there at the doors of their big barn-like cabins, or a merchant getting ready for trade; but scarcely a definite sound is heard, only a muffied stir which gradually deepens. Later you may hear the strokes of an axe on firewood and the croaking of ravens. About eight or nine o'clock the town is generally awake and in its boots and boats. Indians, mostly women and children, begin to gather on the front platforms of the half-dozen stores, sitting carelessly in their blankets, every other face blackened hideously, a naked circle about the eyes, and perhaps a spot over each cheek-bone and on the tip of the nose where the smut has been weathered off. Some of the children also are blackened, and none are overclad. The larger girls and young women are brilliantly arrayed in calico and ribbons and shine among the blackened and blanketed old crones like tanagers among blackbirds. Most of the women have berries to sell, basketfuls of huckleberries, red and black, and the large yellow salmon berries and bog raspberries, looking fresh and clean, in striking relief to the surrounding squalor. They sit and wait in patience for purchasers until hungry; then if they cannot sell their berries they wisely eat them and go to the hillside back of the town and gather more.

Yonder you see a canoe gliding out from the shore containing perhaps a man, a woman, and a child or two, all paddling together in easy rhythm. They are going to catch a fish, no difficult matter, and when that is done their day's work is over. Another party is putting out to glean driftwood, to procure fuel in this way being easier than to drag it down through the bushes from the edge of the woods. As the day advances there is quite a fleet of canoes along the shore, all
fashioned after one pattern, with high and long beak-like prows and sterns, and lines as fine as
those about the breast of a wild duck. What the mustang is to the Mexican vaquero the canoe
is to these coast Indians. They skim over the glassy sheltered waters to fish and hunt and trade,
or merely to visit their neighbors. They exhibit much family pride and are extremely sociable,
meeting frequently to inquire after one another's health, to hold "potlatches" and dances, and to
gossip concerning coming marriages, deaths, births, or the last murder, and what number of blankets
should be demanded as blood-money. Some seem to sail for the mere pleasure of the thing and
to keep themselves and the children in practice, their canoes decorated with handfuls of the purple
epilobium. Wonder you may see a whole family, grandparents and all, making a direct course for
some island or promontory five or six miles away. They are going to gather berries, as the baskets
tell. Nowhere else in my travels, north or south, have I found so lavish an abundance of wild
berries. The woods and meadows are full of them, along the banks of the glaciers on the moun-
tains as well as on the lowlands—huckleberries of many species, salmon berries, blackberries, raspberries,
currants, and gooseberries, with strawberries and service berries in the drier openings, and cranberries
in the bogs, sufficient for every bird, beast and human being in the territory, and thousands of tons
to spare. The huckleberries are specially abundant. Those that grow on the mountains, on bushes
about a foot high, are the best. The berries of the commonest species are smaller and covered
with a dusty bluish bloom. The bushes are from three to six or seven feet high, and grow almost
everywhere about the margins of the woods. This is the species on which the Indians most depend,
who gather them in large quantities, beating them into pulp, and pressing them into cakes about an
inch thick for winter use. The salmon and service berries are preserved in the same way, the
cakes being thoroughly dried before they are stored. The salmonberry is quite generally distributed
through the open portions of the forests and along stream banks, and when in bloom makes a
glorious show of rose-like flowers. The berries are about an inch in diameter and so abundant that
in many places a quart or more may be gathered without moving from the spot where one is
standing.

Berries alone are sufficient to make a telling advertisement of the fruitfulness of this wilder-
ness, without the aid of the forests or fertile foodful waters. The climate of the islands and of
that portion of the coast bathed by the warm Japan current is remarkably bland and temperate
and free from extremes of heat or cold throughout the year. It is rainy, however, so much so that
haymaking will not be extensively engaged in, whatever future developments may reveal, unless, as
in some parts of Norway, artificial means of drying be resorted to. But even this rainy weather
is good of its kind, mild in temperature, gentle in its fall, filling the fountains of the deep, cool
rivers, feeding the luxuriant vegetation, and keeping the whole land fresh and fruitful; while any-
things more delightful than the shining weather in the midst of the rain, the great round sun-days
of June and July, can hardly be found elsewhere.

An Alaskan midsummer day is a day without night. In the extreme northern part of the
territory the sun does not set for weeks, and even as far south as Sitka at its lowest point it is
only a few degrees below the horizon, so that the colors of the sunset blend with those of the
sunrise, leaving no gap of night-darkness between. What is called the midnight of divided days
is here only a low noon, the middle point in the gloaming, with light enough to read by. The
thin clouds that are almost always present are then colored orange and red, marking in a very
striking way the progress of the sun around the northern horizon. The day opens slowly, a low
arch of light steals round to the northeastward with gradual increase of height and span and inten-
sity of tone; and when at length the sun appears above the horizon it is without much of that
stirring pomp, that flashing, awakening, triumphant energy so suggestive of the bible imagery—a
bridegroom coming out of his chamber and rejoicing like a strong man to run a race. The red
clouds with yellow dissolving edges subside into a hazy dimness, the islands with ruffs of mist
about them cast ill-defined shadows on the glistening waters, and the whole firmament becomes pale
pearl-gray. For three or four hours after sunrise there is nothing particularly impressive to be felt
in the landscape. The sun though seemingly unclouded may almost be looked in the face, and the
islands and mountains, with all their wealth of wood and ice and varied beauty of nature's architec-
ture, seem comparatively dull and silent.
As the day advances toward high noon the sun-flood streaming in full power through the damp atmosphere lights the water-levels and the sky to glowing silver. Brightly play the ripples about the edges of the islands and over the plume-shaped streaks between them, stirred by some passing breeze. On the mountain and in the high-walled foords still grander is the work of the sunshine. The broad snowy bosoms of the glaciers glow in dense pressed white, and their crystal fronts and the multitude of bergs that linger about them are kindled into a perfect blaze of irised light. The warm air throbs and makes itself felt as a life-giving, energizing ocean, embracing all the world. Now we may contemplate the life and motion about us; it comes to mind of itself—the tide, the river, the flow of the light through the satiny sky, the marvelous abundance of fishes feeding in the lower ocean, misty flocks of insects in the air, the wild sheep and goats on a thousand grassy ridges above the forests, the beaver and mink and otter far back on many a rushing stream, Indians floating and basking along the shores, the leaves of the forest drinking the light, and the glaciers on the mountains tracing valleys for rivers and grinding earth-meal for every living creature. Through the afternoon all the way down to the sunset the day grows in beauty. The light seems to thicken and become more generously fruitful without losing its softness or smooth translucent glow. Everything appears to settle into conscious repose, while the winds breathe gently or are wholly at rest. The few clouds visible are downy and luminous and combed out fine on the edges. A white gull here and there winnows the air on easy wing, and Indian hunters in their canoes are seen gliding about the islands, every stroke of their paddles told by a quick glancing flash—sky, land and water meeting and blending in one inseparable scene of enchantment. Then comes the sunset with its purple and gold, not a narrow arch on the horizon but oftentimes filling the sky, while the glowing fountain of it all is well round to the north.

I have seen far more gorgeous sunsets than any I have yet witnessed in Alaska but none more impressive. The clouds that usually bar the horizon are fired on the edges, leaving a dull center in strong contrast, and the spaces of clear sky between are filled in with greenish yellow or
pale amber. The orderly flocks of small over-lapping clouds that frequently are seen higher are mostly touched with crimson like the out-leaning sprays of a maple grove in the beginning of Indian summer, while a soft mellow purple flushes the sky to the zenith and fills the air, fairly steeping and transfiguring the islands and making all the water look like wine. The glowing gold soon vanishes, but because the sun descends at a low angle even the glowing portion of the display lasts longer than in most southern latitudes, while the upper colors with gradually lessening intensity sweep around to the north and unite with those of the morning.

The most extravagant of the sunset effects I have yet seen in this moist north-land occurred about the middle of July, when we were sailing between Nanaimo and Wrangel, in a portion of the Archipelago where the islands are sown thickest. The day had been rainy, but toward the latter part of the afternoon the clouds cleared away from the west, all save a few that settled down mostly in level over-lapping bars near the horizon. It was a calm evening and the color came on gradually, increasing in extent of area and richness of tone by slow degrees, as if requiring more time than usual to ripen. At a height of about thirty degrees there was a heavy bank deeply reddened on its lower side and on the projecting portions of its face. Below this there were three horizontal belts of purple edged with gold, while a spreading fan of flame, vividly defined, radiated upward across the purple bars and faded in a feather edge of dull red. Then the whole body of the atmosphere was filled with a thin translucent haze of claret purple in which the islands and mountains with melting outlines seemed to float. Even the nearest objects were colored, and the Divines going to the missions seemed truly divine as they gazed, transfigured, in the glorious purple baptism.

About one-third of the days of the summer of 1879 were rainy or threatening, one-third cloudy with little or no rain, and one-third clear. Of one hundred and forty-seven days beginning May 17, rain fell on sixty-five days, while forty-three were cloudy and thirty-nine clear. Rain fell on eighteen days in June, eight in July, fifteen in August, and twenty in September. But on some of these days only light showers fell, scarcely enough to count, and very few could be called stormy or dismal. Even the bleakest and most bedraggled days usually have a dash of late or early color to cheer them, or some white illumination about the noon hours. Nowhere else have I seen so much rain fall with so little noise. There was no loud-rushing wind all summer, and no thunder, at least I heard none, and from all I can learn it is about as rare a phenomenon in Alaska as in the California lowlands. There is a fresh, sound wholesomeness about even the wettest of the weather, which seems generally conducive to health. There is no mildew in the houses or tendency to mouldiness in any nook or corner, however hidden from the sun; and neither among the people nor the plants do we find that dropsical succulence that so soft and poultice-like an atmosphere might lead one to expect. On the summits of the California Sierra throughout the greater portion of the year the presence of the atmosphere is hardly recognized, and the thin, white, bodyless light of morning comes to the peaks and glaciers as an unmixed spiritual essence, the most impressive of all the material manifestations of the Creator. But the most transparent and most brilliantly lighted of Alaskan atmospheres is always appreciably substantial, and oftentimes it is so thick and velvety that it would seem as if one might test its quality by rubbing it between the thumb and fingers. The cause of the dampness of the
climate is not far to seek. It is found in the vapor-laden winds from the warm ocean waters, and the condensing range of ice-laden mountains along the coast, the highest and iciest on the continent.

July was the brightest month of the summer, with fourteen days of sunshine, six of them in succession, with an average temperature of about 60°, and a maximum of 70°. The average temperature for June at 7 A. M. was 54° 33'; M. 57° 13'; for the same hours for July, 55° 53' and 61° 45'; for August, 54° 20' and 61° 50'; and for September, 52° 23' and 56° 21'. The highest temperature here during the summer was 76°. The winter storms along the coast are mostly rain, at a temperature of about thirty-five degrees, with strong winds which, sweeping the long channels, lash them into white waves and carry salt scud far into the woods. The long nights are then gloomy enough to most people, and everybody is driven to shelter. Snow falls frequently, but seldom to any great depth about the coast settlement, or to lie long. The ground about Wrangel has been covered to a depth of four feet once only since the town was built. The mercury seldom falls much below the freezing point unless the wind blows steadily from the mainland; then at Sitka and Wrangel a zero temperature may be reached. Back from the coast, however, beyond the mountains, the winter months are intensely cold. At Glenora on the Stikine above sea level, a temperature of from thirty to forty degrees below zero is not uncommon. But none need be cold where wood is so plentiful and so easily obtained for house-building. The forests of Southeastern Alaska is of spruce and cypress, all of which are of good size, covering almost every acre of the islands, however rocky, and the mountain-slopes up to a height of from one to two thousand feet above the sea. The most important of these as to timber is the Yellow Cedar or Cypress (Cupressus Nootkaensis), a truly noble tree, which attains a height of a hundred to a hundred and fifty feet and a diameter of three to five feet. The branches are flat, drooping and feathery, dividing into beautiful light-green sprays like those of the California Libocedrus, but with finer foliage and more delicate plumes. The wood of this tree is undoubtedly the best the country affords, and one of the most valuable to be found on the whole Pacific Coast. It is pale yellow, close-grained, tough, durable, and takes a good polish, besides being pleasantly fragrant. The only California wood that resembles it is the Torreya, which has the same delicate yellow color and close grain; but the Torreya is not abundant and the trees are small and generally grow in inaccessible canions, and so are comparatively insignificant as timber. Some three or four ships have been built of yellow cedar, and small quantities, a few thousand feet at a time,
have been sent to Portland and San Francisco from Sitka, Wrangel, Checan, and Port Simpson. Some goes to China, where it is highly prized in the manufacture of fancy boxes. It deserves to be better known, not only to ship builders, but to carpenters and furniture makers. The natives make their paddles of it, and weave matting and coarse cloth from its inner bark, which is of a fine brown color with a satiny lustre. It is also the favorite fire-wood of the coast region, burning freely, but of course not lasting long. A yellow cedar fire seen for the first time is quite a notable phenomenon. The flames quiver and rush up in a multiburning surge and throw off noise that consists of fifteen quickly strewn timber is lasting for cen-
color and fracture from the wood, so far living trees are a fungus which found in Thuja
ted pretty the islands it range is one place,
in value as timber, while it is far more abundant than the cedar. Perhaps one-half of all the forest trees in Southeastern Alaska are of this species. In the heaviest portions of the forests, on deep moraine soil near the sealevel, it grows to a height of from one hundred and fifty to one hundred and seventy-five feet, with a diameter of three to six feet, and is a remarkably beautiful and graceful tree. In habit and general appearance it resembles the well-known Douglass spruce of California, Oregon and the Puget Sound region; but it is somewhat less slender, the branches covering a larger portion of the trunk, and the bluish-green needles radiating all around the branchlets are stiffer and so sharp-pointed that the younger branches cannot well be handled without gloves. The timber is tough, close-grained, and looks like pine, and in general use takes the place of pine. It is said to be stronger than the Puget Sound spruce and quite as durable, and the best of it is probably as good for ship-timber. In a considerable portion of the forests, however, the trees are too small for the masts and spars of larger class vessels. The average height of full grown trees is about eighty or ninety feet, and the diameter at the ground two feet or a little less. The other species is the graceful Hemlock-spruce (Abies Mertensiana). It is more slender than its companion species, but nearly as tall, and the young trees are more graceful in habit. The timber is inferior, and though very abundant is seldom
used where any other kind is to be had. Of the other species found in these forests, but forming a small portion of the whole, the most note-worthy is the large Arbor Vitæ, \( (Thuja gigantea) \), called “Red Cedar.” It is distributed up the coast from California to the southern portion of Alaska. From the soft, easily worked trunks of this magnificent tree the Indians make their fine canoes, some of them large enough to carry fifty men. One made from a tree that grew on the west coast of Vancouver Island is said to be sixty feet long, eight feet wide, and four feet deep.

There are but few pines in Alaska. I have seen only one species, \( P. contorta \), a few specimens of which, fifty or sixty feet high, may occasionally be found about the open margins of lakes and meadows. Beyond the mountains it forms extensive forests. In the canions and fiords and along the banks of the glaciers the Williamson spruce and a species of fir are found. They are usually quite small and storm-beaten, though in sheltered spots the fir sometimes reaches a height of sixty or seventy feet. The only hard woods I have seen in Alaska are birch, maple, alder and wild apple, one species of each. The birch grows mostly on steep declivities well back in the mountain canions in company with spruce and fir. The largest specimens are about forty feet high, and a foot in diameter. The other species are found mostly about the margins of the main forests. The trees are quite small, about eight or nine inches in diameter, and fifteen to thirty feet high. Cottonwoods forty to sixty feet high line the banks of the rivers, growing on beds of flood soil amid a tangle of willows, raspberries and wild roses.

It appears, therefore, that with the important exception of the yellow cedar, timber trees for every use as good or better than those of Alaska abound in California, Oregon, Washington and British Columbia; and it will be only when those sources of supply are exhausted on the more accessible portions of the coast that these grand Alaskan forests will be invaded to any appreciable extent by the lumberman. Seward expected Alaska to become the ship-yard of the world. So it may, a century hence. Meanwhile this supply will keep, and serve the higher use of beauty.
These glorious woods are not threatened by fire, or any other destruction dependent on the agency of man. They are too wet to burn. The roots of the trees are set in a deep sponge of mosses kept saturated by the abundant rains and snows. Beyond the mountains, in the forests of the interior, greater summer heat and less rain and snow render the existence of the trees less secure from the ravages of fire. Immense areas have already been cleared and now appear as smooth, grassy plains. In the region drained by the Yukon the principal tree is the white spruce, *Abies alba.* It is an exceedingly slender tree, spiry, erect, and closely clad with short, leafy sprays, forming the sharpest and most arrow-like spires to be found in any forest. The tallest are about one hundred and twenty-five feet high. I saw it growing bravely on the banks of the rivers that flow into Kotzebue Sound, forming the extreme margin of the Arctic forests. Some time these sources of supply may be made available by way of the rivers; but, fortunately, it will be long ere a time of need will drive the lumberman so far.

The coast and island forests of this south end of Alaska wear a grayish, brownish color in the foreground, black in the middle-ground, and dark blue in the distance. The gray and brown colors are derived from lichens and mosses that grow on the boles and form large nest-like masses on the horizontal palmate portions of the main branches, fifty or even a hundred feet above the ground. Landing almost anywhere to take a walk in these woods, you have first to fight your way through a fringe of underbrush tediously intertangled, made up of rubus, huckleberry, dogwood, willow, elder, etc., and a strange looking woody plant about six feet high, with limber, rope-like stems and heads of broad leaves spread out horizontally like those of palms. Both stem and leaves are covered with long, needle-like spines, so that it is impossible to grasp the plant anywhere with impunity. This is the *Echinopanax horrida,* popularly known as “the Devil’s Club.” It is used by the Indians as an instrument of torture in thrashing witches, and well deserves its name. From its leaning, twisted stems and heads of large translucent leaves, it seems out of place here, as belonging to the tropics rather than to the cool north-woods. Back in the shady depths of the forest the ground is covered with a thick felt of mosses, but little roughened with bushes of any kind, and about as clean and trackless as the sky. On that yellow, elastic carpet no dust ever settles, and walking upon it we make no mark or sound. It clothes the raw earth, logs and trees, ice and rock, the living and the dead, lightly and kindly, stretching untorn to the Polar Sea. How fine its beauty, every leaf and spore-cup and tiny pedicel neat and shining as if trimmed and polished afresh every day! Bars of sunshine are laid here and there, seeming wondrous bright in the deep brooding shade, and at long intervals the silence is mellowed and sweetened by the song of a bird or the song of a stream, and occasionally a deer or a bear may be seen, deepening the tone of the wildness; but most of the animals keep near the outer margin of the dense woods and along the open shore.

The whole country is shining with perennial streams, that flow on, ever fresh and sweet, through plains and forests and cliff-bound glacial canions, telling all the way down to the sea how bountiful are the clouds that fill their shadowy fountains. Some thirty or forty rivers have been discovered in Alaska, the number varying as the smaller ones are called creeks or rivers by the map-makers. But not one of them all, from the mighty Yukon, two thousand miles long, to the shortest of the mountain torrents falling white from the glaciers, has thus far been fully explored. Miners, trappers, traders, and a few ardent explorers have been over most of the country in a rambling way, each bringing in geographical fragments that have been put together in maps that give fair outline views. The coast line in particular has been carefully drawn, and the mouths and the lower reaches of most of the streams; but their upper courses are still in great part invisible, like mountains with their heads in clouds. Perhaps about twenty of the Alaskan rivers are a hundred miles or more in length. The Yukon drains as large an area as that drained by all the other streams of the territory combined. It flows in a general north-westerly direction through British territory for six or seven hundred miles, then, approaching the Alaskan boundary near Fort Yukon, it turns abruptly to the left and pursues a southwesterly course to Behring Sea. It is a broad, majestic flood, scarcely interrupted by rapids, miles in width in some places, and navigable for light draft steamers for a distance of one thousand five hundred miles from its mouth—a noble companion of the great Mackenzie, the two heading together on the smoothly sculptured northern plateau of
the Rocky Mountains. The largest of the rivers whose sources all lie within the bounds of Alaska is the Kuskoquim, which flows into a bay of that name in lat. 60°, and is supposed to be five or six hundred miles long. To the north of the delta of the Yukon a considerable number of smaller streams fall into Norton and Kortzebue Sounds; but from the northernmost of this series, around the shore of the Arctic Ocean for a distance of nearly a thousand miles, there are only one or two rivers of considerable size. Southward from the Yukon to Mount St. Elias, creeks and rivers occur at short intervals, most of which flow quietly as they approach the sea through low bogs and beds of glacial drift. The principal streams are the Kuskoquim, Suchitna, Knik, and Copper rivers. On the last mentioned, which is supposed to be three or four hundred miles in length, masses of native copper have been found. The Indians were acquainted with this metal before the advent of the whites, and from this source probably obtained their supplies of it for the manufacture of weapons and ornaments.

From Mount St. Elias the Coast Range extends in a lofty, unbroken chain beyond the southern boundary of the territory, gashed with stupendous canions, every one of which carries a stream deep enough and wide enough to be called a river, though comparatively short, drawing their sources from the glaciers back thirty or forty miles in the white solitudes of the range. A few of this foaming brotherhood—the Chilcat, Chilcoot, Tahkoo, and Stikeen—come from beyond the Coast Range, though flowing across it in canions cut for them by the forerunning glaciers heading in the broad Rocky Mountain plateau, in company with the tributaries of the Mackenzie and the Yukon. The tributary branches of the main trunk canions of all these rivers are still occupied by glaciers, which descend on both sides in glorious array, their massive bulging fronts terminating a little way back in the shadows, near the bottom of the main canions, or they are pushed grandly forward among the cottonwoods lining the streams, or, blocking the way of the streams, compel them to flow beneath the ice in long arching tunnels.

The Stikeen is perhaps better known than any other river in Alaska, because of its marking the way back to the Cassiar gold mines. It is three hundred and fifty or four hundred miles long and is navigable for small steamers to Glenora, one hundred and fifty miles. It flows first in a general westerly direction, through grassy, undulating plains, darkened here and there with patches of forest; then, curving southward and receiving numerous tributaries from the north, it enters the Coast Range and sweeps across it to the sea through a canyon that is sculptured like Yosemite, and is more than a hundred miles long, one to three miles wide at the bottom, and from five to eight thousand feet deep, marvelously beautiful and inspiring from end to end. To the appreciative tourist sailing up the river, the canyon is revealed like a gallery of sublime pictures, an unbroken series of majestic mountains, glaciers, water-falls, cascades, groves, flowery garden-beds and grassy meadows, in endless variety of form and composition, with furniture enough for a dozen Yosemites. Back of

![Klilinson Island—Chatham Strait.](image-url)
the walls, and thousands of feet above them, innumerable peaks and spires and domes of ice and snow tower grandly into the deep blue sky. Sailing past the groves and bends of the river, the views change with magical rapidity. Wondrous, too, are the changes dependent on the weather—avalanches from the heights, booming and resounding from cliff to cliff, and storm-winds from the arctic highlands sweeping the canyon like a flood, filling the air with ice-dust, and robing rock, glacier and forest in spotless white. In spring there are the chanting of cascades, the gentle breathing of warm winds, the opening of leaves and flowers, the nest-building of birds, the hundred-acre fields of wild roses coming into bloom, and tangles of bramble and huckleberry; swaths of birch and willow creeping up the lower slopes of the walls after the melting snow, massive cumuli piled about the highest peaks, gray rain-clouds wreathing and bathing outstanding brows and battlements; then the breaking forth of the sun on it all, the shining of the wet leaves and the river and crystal glaciers, the looming of the white domes in the azure, the serene color-grandeur of the morning and evening changing in glorious harmony through all the seasons and years. It is not easy to give anything like a full description of such a place, or even to sketch it in outline. All who can should see it for themselves. It is readily accessible from Wrangel by steamer or canoe, and

leaving Wrangel you notice that the water of the bay is milky for miles out from the mouth of the river, the cause being the glacier mud suspended in it, which is the finest portion of the grist ground from the rocks by hundreds of glaciers ranged along the canyon walls. Entering the river five or six miles from Wrangel, the smooth green islands of the archipelago are lost to view, and the canyon walls close at hand are seen sweeping sublimely to the sky, with their trees in showy array, and peaks seven to eight thousand feet high, with small glaciers between them, make their appearance over the tops of their arrowy spires. About fifteen miles above the mouth of the river you come to the first of the larger glaciers, which is seen pouring down through the forest in a shattered ice cascade nearly to the level of the river. Here the canyon is about two miles wide, with cottonwoods along the river banks, and spruce and fir and patches of wild rose and raspberry bushes extending back to the cliffs. Twelve miles above this point a noble view is opened along the tributary canyon of the Skoot River—a group of glacier-laden peaks from ten to twelve thousand feet high, the sources of the largest tributary of the Stikine. A few miles farther on the walls are steeper and smoother, offering fine ways for avalanches and but little anchorage for trees, so that they are mostly bare like those of the Merced Yosemite. The granite, too, has here the same neutral gray tone, and the sculpture and general style of architecture are similar. Cascades are chanting everywhere, descending in white ribbons from the upper glaciers to the green river levels. On one massive rock-front, corniced with ice, you may count eight cascades that form a lace-work beautifully relieved in the small green willows that fringe their edges. The largest booms like the Yosemite Falls in the spring, pouring from the

On the Upper Stikine—Running the Rapids.
blue shattered edge of a glacier to the foot of the cliff in a snowy plume two thousand feet long.

Thirty-five miles above the mouth of the river the most striking object of all comes in sight. This is the lower expanded portion of the Big Glacier, or Ice Mountain, as it is sometimes called, said to measure nearly six miles around the front, which is pushed boldly forward into the middle of the wide floor of the canyon among the trees. It takes its rise in the heart of the mountains, thirty or forty miles away, but most of its upper sources are hidden from view. Compared with this, the Swiss *Mer de Glace* is a small thing, though many glaciers in Glacier Bay and elsewhere in the territory are many times larger. The great white front of the glacier is about three hundred feet high, but it rises gradually to a height of about one thousand feet a few miles back from the immediate front. Seen through gaps in the trees growing on the terminal moraines, as one sails slowly against the current, the marvellous beauty and grandeur of its caves and chasms and shattered pinnacles in varying light and shade are seen to good advantage, but tame indeed must be the observer who is satisfied with so cheap a view.

On the opposite side of the river there is another large glacier flowing river-like through the forested bosses of the wall. Some three hundred years ago, the Indians say, these two glaciers, now facing each other, with their fronts several miles apart, were united, thus blocking the channel of the river which then flowed beneath the ice in a grand tunnel, and through this tunnel the Indians sometimes ventured in their canoes. This tradition is interesting, as carrying a truth hundreds of years without much change. That these two glaciers were united is undoubtedly true, though more than three hundred years have elapsed since they were separated, and the river ran free, as the trees growing on the banks show. Between the threatening ice-walls of these two glaciers lives Choquette. Happy man! though perhaps somewhat blind to his glacial blessings. It was not, he says, without grave misgivings that he ventured to build his cabin here, fearing that something might happen in connection with the mysterious "Ice Mountains." He is an Indian trader, the only settler on the river up to within a few miles of Glenora. Some thirty-five miles
above Choquette's the Hudson Bay Company had a trading post, which is now abandoned. The big glacier is hardly out of sight ere you come upon another that pours a majestic crystal flood through the evergreens, while almost every hollow and tributary cañon contains a smaller one, the size varying with the extent of the area drained. Some are like mere snowbanks; others with the blue ice apparent, depend in massive bulging curves and swells, and graduate into the river-like forms that maze through the lower forested regions and are so striking and beautiful that they are admired even by the passing miners with gold dust in their eyes. I counted one hundred and sixty-one of them in sight from the river, but the whole number drained by the Stikeen throughout its entire course is probably more than three hundred.

A comparatively short time ago this magnificent cañon was occupied by a grand trunk glacier that flowed to the sea, and to which all these residual glaciers were tributary. The river, which has taken the place of the trunk glacier, is still imperfect, like a half developed plant. The trunks of some of the shorter rivers heading in the Coast Range are still as imperfect as the branches of the larger ones, while a few, predestined to take their places in the general river system of the country, have not yet begun to flow, the channels they are to occupy and the country they are to drain being yet covered by a continuous mantle of ice.

Another interesting excursion may be made from Wrangel to the old deserted village of the Stikeen Indians. It is fourteen miles to the south of Wrangel, situated on a gently rising ground, with a strip of gravel and a strip of tall grass in front, the dark evergreen forest behind it, and charming views to right and left among the islands and channels. Not a house in the village has its walls left standing. The place was deserted some eighty or ninety years ago; so said our guide, Kadachan, and his word is corroborated by the venerable aspect of the ruins. But though the climate is so destructive to wooden buildings, many of the timbers lying in a dense growth of weeds and bushes are still in a good state of preservation, particularly those hewn from the yellow cedar. The magnitude of the ruins and the excellence of the workmanship manifest in them is surprising, as being the work of Indians. The first that I examined had been a dwelling about forty feet square, with walls built of planks two feet wide, six inches thick, and forty feet long. The ridge pole, of yellow cedar, still perfectly sound, is two feet in diameter, forty feet long, and as true as if it had been turned in a lathe. The nibble-marks of the stone adzes are still visible on these timbers, though crusted over with lichens in most places, giving the surface the appearance of stone. The pillars that supported the ridge-poles are still standing in some of the ruins. They are all, so far as I observed, elaborately carved with figures of fishes, birds and various animals, such as the beaver, wolf or bear. Each plank has evidently been hewn out of a whole log, and must have required great patience and industry as well as skill. Their geometrical accuracy is admirable. With the same tools, not one civilized workman in a thousand, however skillful, would have done as good work; few, indeed, with steel tools. Compared with this, the bravest work of our hardy backwoodsman with chalk line and broad axe is feeble and bungling. There is a completeness about the form, finish and proportions of these timbers that suggests instinct of a wild and positive kind, like that which guides the woodpecker in drilling round holes and the bee in making its cells.

But the most striking and interesting objects to be seen about these deserted streets are the carved monuments standing in front of the ruined houses. The simplest of them consists of a smooth round pillar, fifteen or twenty feet high, and about eighteen inches in diameter, hewn from the trunk of a cedar, and set firmly erect, with the carved figure of some animal on top, such as a bear or whale, or an eagle or raven, these being the totems of the families that occupied the houses in front of which they stand. Others support the figure of a man or woman, of life size or larger, in a sitting posture, and said to resemble and represent the dead whose charred bones and ashes are contained in cavities made in the pillars to receive them. Others consist of a massive pillar thirty or forty feet high, the whole body of which is deeply carved from top to bottom with human figures, one above the other, with limbs grotesquely doubled and folded. In some instances, the human figures are mixed with those of animals, and are said to have some
mythological or historical significance. But family pride and dignity in a telling display of their several totems seems to be the prevailing motive. All the figures are more or less rude and some are broadly grotesque, but there never is any feebleness or obscurity in the expression. On the contrary, every figure shows grave force and decision, combined with manly strength of execution. Colored lichens and mosses give them a venerable air of antiquity, though few are more than one hundred years old, while the larger vegetation often found in such as are most decayed produces a picturesque effect. For example, there is a bear five or six feet long reposing on top of his lichen-frescoed pillar with paws comfortably folded, a tuft of grass in each ear, and rubus bushes along his back; and yonder is an old chief poised on a taller pillar, apparently gazing out over the beautiful landscape in contemplative mood, a tuft of bushes leaning back with a jaunty air from the top of his weather-beaten hat, and downy mosses about his massive lips, the whole figure sharply relieved against the sky. But no rudeness or grotesqueness that may appear in combination with the decorations that nature has added provokes mirth; the work is too serious in aspect for mirth, and brave and true in execution. Similar monuments are made by all the tribes of the archipelago. Those of the Haidahs of Queen Charlotte Island are said to surpass all others in size and excellence.

The erection of one of these totem poles is made a grand affair, and is talked of for a year or two beforehand. A feast is held to which hundreds of neighbors and friends are invited, and the joyous time is spent in eating, dancing, speech-making and the bestowing of gifts. Some of the larger specimens cost a thousand dollars or more. From one to two hundred blankets, worth three dollars apiece, are paid to the genius who does the carving, while the presents and feast may cost twice as much as the blankets, so that, only wealthy families can afford them. An old Indian pointed out to me one of the Wrangel totem poles, which he said he had made, and for which he had received forty blankets, a gun, a canoe, and other articles of less value. Mr. Swan, who has contributed much information concerning the Indian tribes of the northwest coast, mentions one specimen that cost two thousand five hundred dollars. They are planted firmly in the ground. Even those of the deserted village are nearly all standing, showing the strength of the backbones of the builders.

The moss-grown ruins of the deserted village seem to foreshadow too surely the fate of the Stikeen tribe, and perhaps of all the allied tribes of this portion of Alaska. Contact with the whites has already reduced the numbers of the Stikeens more than one-half, and there are fewer births than deaths. Like snow in sunshine they are passing away. Will they perish utterly in
this land of abundance? A few years will tell. Under present conditions their only hope seems to lie in the efforts that are made for them by missionaries and teachers, who stand between them and the degrading vices of civilization, and bestow what good they can. Thus a remnant may possibly be saved to gather fresh strength and grow up into the high place to which they seem so fully capable of attaining.

Most of the permanent residents of Wrangel are traders in fish, furs and mining supplies, but since the Cassiar gold mines beyond the head-waters of the Stikine have been worked out, on which most of the business life of Wrangel depended, the place has become comparatively unimportant. The greater part of the mining business of the territory now centres at the new town of Juneau, one hundred and fifty miles up the coast, opposite Douglass Island. The gold of Alaska is still in the ground; all save a few tons of it, gathered here and there from the more accessible veins and gravel beds of the islands and the mountains near the coast. Probably not one vein or placer in a thousand has yet been touched by the miner's pick, while the vast interior region drained by the Yukon is comparatively a virgin wilderness, its mineral wealth about as darkly hidden as when it was covered by the ice-mantle of the glacier period. So far as the mines have been examined, the color of gold has been found on every considerable stream, and light sooner or later is sure to come.

Thousands of sturdy miners, graduating from the ledges and gulches of California and Nevada, will push over the whole territory and make it tell its wealth in the face of every obstacle with encouraging results. Many have already made their way by the Chilcat Pass into the basin of the Yukon. The extent of the developments likely to be made we can only guess; but comparing this northern portion of the gold-bearing belt of the continent with corresponding portions to the southward, the richness of which has been proved, a good foundation is discovered for the opinion that the country as a whole will prove at least moderately rich in the precious metals, and that gold, notwithstanding disadvantages of climate, obscuring vegetation, etc., will come to be regarded as one of the most important and reliable of its resources.

Leaving Wrangel, the steamer proceeds up the coast to Juneau. After passing through the picturesque Wrangel Narrows into Souchoi Channel and Prince Frederick Sound, you may notice a few icebergs on the outer edge of the fleet that comes from a large glacier flowing into the head of a magnificent fiord about twenty miles above the mouth of the Stikine. This is the southernmost, so far as I have observed, of the glaciers of the Pacific Coast that flow directly into the waters of the sea and send off bergs. It is well known to the Indians, who glide about among the bergs in the smallest of their canoes to hunt seals, but it is not known among the whites at Wrangel, though they are almost within hearing of the thunder of its falling bergs. For a distance of about twelve miles the fiord is fairly crowded with icebergs of every size and shape, and to make one's way through them in the larger canoes without disaster requires the utmost caution and vigilance. The Indian name of the fiord is Hutli, or Thunder Bay, from the noise made by the falling and rising of the bergs as they are detached from the snout of the glacier. Gliding northward on your shining way, the mountains of the mainland on one hand, Kuprianoff and innumerable smaller islands on the other, the views in bright, cloudless weather reach far into the glorious wilderness, and all are purely wild, without trace of touch or taint, stainless as the sky.
At long intervals a party of Indians may be seen sailing on their long journeys, but they make no mark on the landscape and never seem to belong to it. Like travelers in the air, they vanish in the distance and leave no visible sign. Salmon are seen here and there, leaping three or four feet out of the water, showing their silvery sides for a moment and then falling with a splash among foambells and widening circles of ripples. Ducks, too, of many species, stir the water and gulls and eagles the air, pictures of glad wild life. The beauty of the islands, seen in ever changing combinations, is an unfailling source of delight; but chiefly your attention will be turned upon the mountains, now for the first time in full near view. Now some bold granite headland, plunging into the channel with fine arching instep, will hold the eye, or some peak of surpassing beauty of sculpture, or some one of the larger glaciers seen directly in front, its gigantic arms and fingers clasping entire groups of peaks, and its huge white trunk sweeping to the waters of the channel between lofty gray domes and ridges, its crystal current breaking here and there into shattered

cascades, with azure light filling the crevasses and making the most dangerous and inaccessible portions of the glacier the most beautiful of all. Creeping along the coast the icy cañons are opened to view and closed in regular succession like the leaves of a book. About midway between the head of Wrangel Narrows and Cape Fanshaw you are opposite a noble group of glaciers flowing from a complicated chain of crater-like fountains, guarded and guided around their summits and well down their sides by black jagged peaks and crests and curving mural ridges. From each of the larger clusters of fountains a wide cañon like Yosemite opens down to the foot of the range, that is, to the level of the sea. Three of the trunk glaciers flowing in these main cañons descend nearly or quite to the sea-level, though none of them send off icebergs, their fronts being cut off from the water by mud-flats and terminal moraines. The largest of the three, fed by eight or ten tributary glaciers, and probably about fifteen or twenty miles long, terminates in the middle of a grand Yosemite ford and valley in an imposing wall of ice about two miles long and from three to five hundred feet high, forming a barrier across the valley from wall to wall. It was to this glacier that the ships of the Alaska Ice Company resorted for the ice they carried to San Francisco,
the Sandwich Islands, and I believe also to China and Japan. They had only to sail up the deep fiord harbor within a short distance of the ice-wall, drop anchor in the moraine mud, and load to capital advantage.

Another glacier a few miles to the south of this one receives two large tributaries about equal in size, and then flows on down a forested valley in a grand sweep to within a hundred feet or so of the sea-level. The third of this low-descending group is still farther south, and though less imposing than either of the others is still a truly magnificent object, even as seen imperfectly from the deck of the passing steamer, and of itself would be well worth a visit to Alaska to any lowlander so unfortunate as never to have seen a glacier.

But it seems a sad and pitiful thing to pass by all these fine mountain mansions of rock and ice without making a single visit for nearer views. For grand as they appear at a distance of ten or twelve miles, few can guess the grandeur they display when one is in cordial contact with them. I will therefore try to describe the largest of the three mentioned above as it appeared to me, when, with a small party, I saw it one bright July day and climbed among its blue dazzling crags.

Arriving opposite the mouth of the fiord into which it flows, we steered straight inland between wooded shores surpassingly beautiful, and soon the lower portion of the broad, swelling trunk of the glacier came in sight, lying at home tranquil and sunful in its massive granite valley, and extending a most cordial invitation to come and see. After we were fairly between the two majestic mountain rocks that stand guard at the gate of the fiord, the view that was unfolded fixed every eye in wondering admiration. No written words, however put together, can convey anything like an adequate conception of its sublime grandeur, the noble simplicity and fineness of the sculpture of the walls, their magnificent proportions, their cascades, gardens and forest adornments, the placid water between them, the great white and blue ice-wall stretching across in the middle, and the snow-laden mountain peaks beyond. Still less are words capable of describing the peculiar awe one experiences in entering these virgin mansions of the icy north, notwithstanding they are only the perfectly natural effect of simple and appreciable manifestations of the presence of God.

By one standing in the gateway of this glorious temple and regarding it only as a picture, its outlines may be easily traced. There is the water foreground of a pale milky-blue color, derived from the suspended rock-particles issuing from beneath the ice, a smooth sheet sweeping back five or six miles like one of the lower reaches of a great river. At the head the water is bounded by a wall of pale blue ice five or six hundred feet high, a few mountain tops covered with snow appearing beyond it. On either hand stretches a series of majestic granite rocks from three to four thousand feet in height, in some parts bare, in some forested, all flecked with patches of yellow-green chaparral and flower gardens, especially about half way up from their bases, the whole built together in a general varied way into walls like those of Yosemite Valley. The walls extend far beyond the ice-barrier, one immense brow appearing beyond the other along the sides of the glacier, while their bases are buried beneath the ice. This is in fact a Yosemite Valley on a grander scale in process of formation. The modeling and sculpture of the cliffs is nearly completed, and they are already well planted in most places. But there are no groves as yet on the raw, unfinished bottom of the valley, nor meadows, nor flower beds. It is as if the traveler on entering Yosemite should find the walls nearly in their present condition, with trees and flowers in warm nooks and along the sunny portions of the moraine-covered brows, but the bottom of the valley still covered with water and beds of gravel and mud, and the grand trunk glacier that formed it slowly melting and receding, but still occupying the upper half of the valley, its rugged front stretching across from the Three Brothers to a point below the Sentinel.

Sailing directly up to the sunken brow of the terminal moraine, we seemed to be separated from the glacier only by a low tide-leveled margin of detritus about a hundred yards in width, but we afterwards found the distance to be a mile or more. Approaching the driest looking portion of the moraine front we stepped ashore, but gladly wallowed back into the canoe, for the fine gray mineral paste made out of granite flour ground beneath the ice, at once began to take us in, swallowing us feet foremost with glacial deliberation. Our next attempt, made nearer the middle of the valley, was successful, and we soon found ourselves on good gravelly ground beyond reach of the tides, and...
made haste in a direct line for  
for the huge ice-wall which seemed  
recede as we advanced. The  
only difficulty encountered on the  
way was a network of icy streams,  
many of which had to be forded.  
At length we reached the glorious  
crystal wall, along the foot of which  
we passed, admiring its marvelous  
arithmetic, the play of light in  
the blue rifts and angles, and the  
structure of the ice as displayed in  
the less fractured sections, finding  
fresh, exultant, rejoicing beauty  
at every step. By dint of patient  
zigzagging and doubling among the crevasses and a vigorous use of an axe in cutting steps on the  
the ice-blades and ridges, we made our way up over the terminal wall and back a mile or so above  
the jagged cascading brow to a height of about seven hundred feet above the base of the wall. Here we obtained a glorious view. The whole front and brow of the glacier is gashed and sculptured  
into a maze of yawning chasms and crevasses and a bewildering variety of strange forms appalling  
to the strongest nerves but beautiful beyond description—clusters of glittering lance-shaped spires,  
gables and obelisks; bold outstanding bastions, and plain mural cliffs adorned along the top with  
fretted cornice and battlement; while every gorge and crevasse, pit and hollow, was filled with light,  
pulsing and shimmering in pale blue tones of ineffable tenderness and beauty. The day was warm,  
and back on the broad waving bosom of the glacier, where crevasses were less common, small  
streams of pure water were outspread in a complicated network, gleaming and glancing in frictionless  
channels worn into the solid blue ice, and flowing with a grace of motion and a glad ring and  
gurgle and flashing of light to be found only on the crystal hills and dales of a glacier. Every  
feature glowed with intention, reflecting the earth-plans of God. Along the sides we could see the  
mighty flood grinding against its granite walls with tremendous pressure, rounding the outstanding  
bosses, deepening and widening its grand valley channel, and fashioning every portion of its moun­  
tain walls into the forms they are destined to have in the fullness of time, when, all the ice-work  
accomplished, the glacier, like a tool no longer required, shall be withdrawn from its place by the sun.  

Back two or three miles from the front the current  
is now perhaps about twelve hundred feet deep. But when  
we examine the walls, the grooved and rounded features  
so surely glacial show that in the earlier days of the  
the Ice-Age they were all overswept, this glacier having once  
flowed at a height of from three to four thousand feet  
above its present level. Standing here with facts so  
fresh and telling, and held up so vividly before us, every  
seeing observer, not to say geologist, must readily appre­  
hend the earth-sculpturing, landscape-making action of  
flowing ice. And here, too, one learns that  
the world, though made, is being made; that this  
is still the morning of creation, that mountains  
and valleys long since conceived are now being  
born, channels traced for rivers, basins hollowed  
for lakes; that moraine-soil is being ground and  
outspread for coming plants, coarse bowlders and  
gravel for forests, finer meal for grasses and  
flowers; while the finest water-bolted portion of  
the grist seen hastening out to sea is being
stored away in the darkness, and builded particle on particle, cementing and crystalizing to make
the mountains and valleys and plains of other landscapes, which, like fluent, pulsing water, rise and
fall and pass on through the ages in endless rhythm and beauty.

We gladly would have remained on this rugged, living, savage old mill of God and studied
its works and ways, but we had no store of bread, and the little steamer that brought us was
screaming nervously for our return. Therefore, threading our way back through the crevasses, and
down the blue cliffs, we snatched a few flowers from a warm spot on the edge of the ice, plashed
across the moraine streams, and bade the glacier farewell.

Opposite this group the steamer passes around an outcurving bank of traveled bowlders and
sand ten miles in length, which is pushed forward into the sound and is about half exposed at low
tide. This is the terminal moraine of a grand old glacier that was at least ten miles wide, and was
with the ice-sheet that formerly filled all the channels along the coast.

Its location and the general relationship it bears to the three large glaciers described
above indicate that these three once flowed together as tributaries to form the vanished
trunk to which the great moraine belonged.

Making our visit a few centuries too late, we had missed the grandest feature of this part of
the coast. Enough is left, however, to enable us to restore it in imagination, and see it about
as vividly as if actually present, with fertile snow-clouds wreathing its fountains, sunshine on
its broad, undulating bosom, and its lofty ten-mile ice-wall planted in the deep waters of
the sound and sending off fleets of bergs with loud-resounding thunder in calm and
storm through the long icy centuries.

At the mouth of the Tahkou Inlet, as you approach Juneau, drift-
wealth of the neighborhood. The
which, at the time of my visit, was
deserted. Not a single lawyer, doctor or
These people are so happily rich, that they
to keep or to lose, nothing worth fretting
catching salmon, so our Indians told us. All
doned at regular periods every year, while
and hunting stations, occupying each in suc-
coming and going to and from the substantially built villages. Then, after the summer's work is
done—the winter's supply of salmon dried and packed, fish and seal oil stored in boxes, berries and
spruce bark beaten and dried and pressed into cakes, their hunts after wild goats, deer and bears
brought to a close, their trading trips completed, and the year's stock of quarrels with the neighboring
tribes patched up in some way—then they devote themselves to feasting, dancing, visiting, and hootchenoo
drinking. Hootchenoo is a vile, fiery liquor which they have learned to distil in the most primitive
way from sugar, molasses, dried apples and flour. It keeps entire villages for weeks at a time
in a state of frenzied, demoniac drunkenness. The Tahkous were once a powerful and warlike
tribe, but this vile drinking and other vices have nearly swept them out of existence. They have
a larger village on the Tahkou River, but according to the census taken eight years ago by the
missionaries, the tribe numbers only 269 all told—109 men, 79 women, and 81 children. These
figures show the vanishing condition of the tribe at a glance.

The Tahkou Inlet, or fiord, is about twenty miles long and from three to five miles wide, and
extends back into the heart of the mountains, draining hundreds of glaciers, great and small, once
tributary branches of the one grand glacier that formed and occupied the fiord for its channel. This
fiord, more plainly than any other that I have examined, illustrates the mode of formation of the
wonderful system of deep channels extending from Puget Sound; for it is a marked portion of that
system, a branch of Stephen’s Passage, still in process of formation, while its trends and general
sculpture are as distinctly glacial as those of the smaller fiords. I counted some forty-five glaciers
in sight from the canoe in sailing up the middle of the fiord. Three of these come down to the
level of the sea at the head of the fiord from a group of lofty mountains, forming a glorious
spectacle. The middle one of the three belongs to the first class, pouring its majestic current
directly into the fiord and filling it with bergs. The next below also sends off icebergs occasionally,
though separated from the tide-water by a narrow strip of moraine detritus. While I was examining
it a large mass fell from the snout, damming the outlet, and when at length the dam gave way,
a powerful flood swept thousands of small bergs forward into the fiord with exciting display of
energy. In a short time all was quiet again, the flood-waters were spent, and only a blue scar
on the rounded gray front of the glacier and a line of stranded bergs on the overswept moraine
flat were left to tell the event.

While I sat sketching among the drifting icebergs, where I could see well back into their
snowy fountains, two Tahkou Indians, father and son, came gliding toward us in an extremely
small cottonwood canoe. Coming alongside with a good natured “saghaya,” they inquired who we
were, our objects, etc., while they in turn gave us information about the river, their village, and
two other large glaciers a few miles up the river-cañon. They were hunting seals, and as they
glided away in pursuit of their prey, crouching in their tiny shell of a boat among the great
bergs, with barbed spear held in place, they formed a picture as arctic and remote from anything
to be found in civilization as ever was sketched for us by the explorers of the far north. Making
our way through the crowded bergs to the extreme head of the fiord, we entered the river, but
were soon forced back by the swift current. The Tahkou is a large stream, and like the Stikleen,
draws its sources from far inland, crossing the Coast Range through a magnificent cañon, and
draining a multitude of glaciers on its way. The Indians, with keen appreciation of the advantages of their position for trade, hold possession of the river and compel the Indians of the interior to accept their services as middlemen, instead of allowing them to come down the river to trade directly with the whites.

After leaving Juneau the steamer passes between Douglass and Admiralty Islands into the beautiful and spacious Lynn Canal, carrying supplies to the canneries at Pyramid Harbor, near the mouth of the Chilcat River, thus introducing the tourist to some of the grandest scenery of the northern extremity of the archipelago. The Auk and Eagle Glaciers are seen on the right as the steamer enters the canal, sweeping grandly through the forests, showing beauty and majesty, ever new and inspiring notwithstanding all that has been seen before. But it is on the left side of the canal as you go north, towards the head, that the most striking and beautiful feature of this northern landscape is seen,—the grand Davidson Glacier. It first appears as an immense ridge of ice thrust abruptly forward into the canal, but it is not until you have advanced to a position almost immediately in front of it that its sublime and simple beauty is fully displayed. Then it is seen sweeping smoothly forward in a broad flood, and issuing from its far white fountains, a massive granite gateway spreading then to right and left into an immense fan-shaped mass exquisitely symmetrical in all its lines. It measures more than three miles around the front, and on the terminal moraine built up out of the deep waters of the canal there is a fine growth of spruces, which forms a beautiful fringe for the front of the ice. This spruce fringe so evidently belongs to the glacier and is so neatly applied to its broad, curving front, that it appears almost conventional. No one who has seen the Davidson Glacier will ever forget it, however icy his after travels may be.

Shortly after passing the glacier, the northmost point of the trip is reached, a little beyond lat. 59°. Here among the salmon at the canning establishment one may learn something of the population of these beautiful waters. Whatever may be said of other resources of the territory, its timber, minerals and furs, it is hardly possible to exaggerate the importance of the fisheries. Besides whales in the far north, and the cod, herring, halibut, and other fish that swarm over immense areas along the shores and inlets, there are probably not less than a thousand salmon streams in Alaska, filled with fine salmon every season. Their number is beyond conception. At certain seasons there are in the smaller streams more salmon, bulk for bulk, than water. In fording the lower portions of some of the streams, when they are shallowed by the fall of the tides, the wriggling, struggling multitudes crowding against one another in tens of thousands are unable to get out of one’s way. On one occasion one of my men waded out into the midst of a crowded run and amused himself by picking up the fish and throwing them over his head. Thousands could thus be taken by hand on rocky shallows. In a single hour an Indian may capture salmon enough to last a year. Sailing up these streams in a dark night when the salmon are running and the waters are phosphorescent, a very beautiful and exciting effect is produced; for then the myriad fins of the onrushing multitude churn all the water into silver fire, making a glorious glow in the darkness.

It is through the cañon of the Chilcat River, opening into the head of Lynn Canal, that the best way lies across the mountains into the basin of the Yukon, and over this pass an ever increasing stream of prospectors and miners push their way every season, though it is only a few years since the Chilcat tribe holding possession of the pass allowed either traders or miners to use it. These Yukon gold-seekers have been fairly successful as far as known, and the wealth of that wilderness is being gradually revealed.

The prow of the steamer is now turned southward down the canal, along Cross Sound, and into the wonderful Glacier Bay. All the voyage thus far has been lavishly icy, but this is pre-eminently the Ice-land not only of Alaska, but of the whole Pacific Coast, from California to the shores of the frozen Polar Sea.

Glancing for a moment at the results of a general exploration of the mountain ranges of the coast, we have shown in other portions of this work that there are between sixty and seventy small residual glaciers in the Sierra Nevada. Northward, through Oregon and Washington, groups of active glaciers still exist on all the highest mountains—the Three Sisters, Mts. Jefferson, Hood, Adams, St. Helens, Rainier, Baker and others; one of the largest of the Rainier group descends nearly to
the level of the sea. On through British Columbia portion of Alaska, the broad, sustained chain of along the coast is generally glacier-bearing. The all of the main canions are occupied by glaciers, in size and descend lower, until the lofty region between Mt. Fairweather and Mt. St. Elias is reached, where a considerable number are found that discharge into the waters of the ocean. This is the region of greatest glacial abundance on the west side of the continent. Westward from Icy Bay, around Prince William Sound and Cook's Inlet, the Alaska Peninsula and Aleutian Islands, the size and number of the glaciers gradually diminish, while to the north of latitude 62° few, if any, glaciers remain in existence, the ground being comparatively low, and the snowfall light. In Glacier Bay the traveler is introduced to the iciest portion of the Alaskan Alps, where he may spend a whole summer without reaching the upper fountains of the five great glaciers that flow into the bay and discharge icebergs.

The largest of these is the Muir Glacier, which enters the bay on the northeast side, at the head of a fiord with lofty, massive granite walls. The steamer sails up the fiord with its load of wondering tourists, making a way through the drifting icebergs with which the waters are crowded, and drops anchor within half a mile of the blue, shining ice-wall in which the glacier terminates. When first observed at a distance of eight or ten miles, the ice-wall appears as an abrupt, sharply defined barrier about fifty feet high, stretching across from side to side of the fiord, a distance of several miles. Its height above the water is probably three or four hundred feet, but far the greater portion is below the water and terminal moraine. If the water and the rock-detritus of the bottom were drained and cleared away, this magnificent wall of pale blue ice would probably be found to be not less than a thousand feet in height. Though in general views it seems massive and regular in form, it is by no means smooth. Deep rifts and hollows alternate with broad, plain bastions, while it is roughened along the top with innumerable spires and pyramids, and sharp, jagged blades leaning and toppling; and when the slanting sunbeams are pouring through the midst of all this angular cut-glass of ice, the effect is a perfect glory of rainbow colors. Added
to this and mingling with it is the irised spray ever and anon rising from the plunging bergs as they fall from the wall or rise from the bottom of it with loud-resounding roar, while the countless bergs floating in front are shining also and sifting the sunbeams, making a very paradise of light in full rainbow bloom.

Impressive, too, are the nights along these crystal cliffs—the shining of the moon and stars, projecting buttresses and battlements seemingly far higher than by day, standing forward resplendent in the moonlight, vividly relieved amid the shadows of the hollows, the thunder of the falling masses at intervals of three or four minutes, and the lunar bows with faint iris colors in the up-dashing spray. But it is in the darkest nights when storms are blowing that the grandest views are to be had. Then the ghostly bergs, grating and crashing against one another, seem like living creatures, dancing in mad delight with the phosphorescent water, which laves them all with silver light; while the great crystal wall is illumined by a glowing fringe of foam beating against its base.

The steamer lies at anchor long enough for short excursions on shore. Two or three miles above the front, on the left bank, one may easily get upon the surface of the glacier, where it is so smooth and free from cracks and chasms that a hundred horsemen might ride abreast up stream for ten miles or more, though the middle of the glacier for several miles back from the front is shattered into a perfect labyrinth of yawning crevasses and splintered ridges hopelessly inaccessible. From the top of an icy mountain, about three thousand feet high, and six miles from the end of the ice-wall, may be obtained a grand, comprehensive view, embracing most of the glacier and its tributaries. It then appears as a vast reservoir of ice, fed by a hundred tributary glaciers, pouring into it from the snowy recesses of an immensely high range of mountains, which, in clear weather, display themselves over the vast expanse of ice in all their glory. But unless one is willing to remain a month or two, comparatively little of this glacial wilderness will be seen.

From Glacier Bay and Cross Sound, the steamer now passes through the picturesque Peril Straits to Sitka, the capital of the territory. Here the traveler may spend an interesting day amid the old Russian ruins and along the beautiful shores of the bay.

Leaving Sitka, Fort Wrangel is again touched for the mails, and thence turning southward, the home voyage is speedily accomplished, and you find yourself again on common ways with many pictures of wild north-land beauty that will remain apart from all others, and enrich your life forever.

JOHN MUIR.