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ALASKA FORESTS.

Evergreens--The Yellow Cedar and Various Uses.

The White Spruce--Pines and Cottonwoods--Firs and Hardwoods.

Extent and Commercial Value of Alaska Forests--The "Devil's Club."

[SPECIAL CORRESPONDENCE OF THE BULLETIN.]

FORT WRANGEL, October 8, 1879.

The bulk of the forests of Southeastern Alaska is made up of three species of evergreens, all of which are of good size, and grow close together, covering almost every acre of the islands, however rocky, and the margin of the coast and the mountain slopes up to the height of about 2,000 feet.

THE YELLOW CEDAR.

The most important of these as to timber is the yellow cedar, or cypress (*Chamaecyparis Nuttalliana*), a truly noble tree, attaining a height of 150 feet, and diameter of from 3 to 5 feet. The branches are pinnate, drooping, 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; and to these qualities is added a pleasant fragrance, like that of sandal-wood.

The only California wood that resembles this is the torrefa, which has the same delicate yellow color and close texture, but the pleasant scent is wanting, while the trees are small and scattered in and out of the canyon. 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, Fort Wrangel, Checan and Port Simpson, probably less than a million feet in all. Some little goes to China, and is made into fancy box-boards, said, to be returned to us for camphor wood. It deserves to be better known, not only to shipbuilders, but to carpenters and furniture makers. The Indians here make their paddles of it, and weave matting and coarse cloth from the inner bark of the tree, which is made of a fine brown color.

It is also the favorite firewood of the coast region, burning very freely, though it does not last long. A yellow cedar fire, to any one witnessing it for the first time, is quite a notable phenomenon. The flames quiver and rush up in a maelstrom of ragged-edged flames, while the burning surfaces snap, and crackle, and explode, and throw out a shower of glowing coals, with such a noise that conversation in an ordinary pitch of voice is at times impossible. Every open hearth in which this wood is burned has been closely screened with a framework of wire netting, else the floor would be soon with cinders. The durability of this timber is forcibly illustrated by the fallen trunks lying in the damp woods. Many of the largest of them last for centuries, retaining even the delicate color and fragrance unimpaired. Soon after they fall they are overgrown with moss, in which seeds lodge and germinate and grow up into vigorous saplings, standing all in a row on the backs of their dead ancestors. As they grow larger they stand aside, sending their roots down and out on both sides like straddling legs of a spider. And, after they have reached an age of several hundred years, the down-trodden trunk when cut into will almost always be found as fresh in the heart as it was when it fell. Decay goes slowly on from the outside, never coming in the heart of the wood, as far as I have noticed, though a good many of the living trees are injured by a fungus which produces a dry-rot similar to that found in thuja and libocedrus. The species is found as far south as Vancouver Island, and is pretty generally distributed along the coast and through the islands, as far north as Sitka. How much further in either direction I am unable to say. But though its range is thus extensive it does not seem to be very abundant at any one place, or to occupy any considerable area to the exclusion of other species.

THE WHITE SPRUCE.

The white spruce, or Sitka pine, (*Abies Menziesii*) ranks next in value as to its timber, while it is far more abundant than the first. Perhaps one-half of all the individual trees in Southeastern Alaska belong to this species. In the heaviest portions of the forest it grows to a height of from 150 to 175 feet, with a diameter of from 3 to 6 feet, and in habit and general appearance resembles the Douglas spruce, as common about Puget Sound. It is somewhat less slender, however, the branches cover a larger portion of the trunk, and the needles, radiating all around the branchlets, are stiffer, and so sharp-pointed that the younger branches cannot be comfortably handled without gloves. The timber is tough, close-grained, white, and looks much like pine. It splits freely, and makes excellent shingles and shakes, and in general use in house-building takes the place of pine. It is more durable, and quite as strong as the Puget Sound spruce, and the best of it would probably make quite as good ship timber. In a considerable portion of the forests, however, the trees are too small for the masts and spars of the larger class of vessels. A tree of this species that grew back of Fort Wrangel was a little over six feet in diameter inside the bark, about four feet above the ground, and about 600 years old at the time it was felled. Another specimen, about four feet in diameter, was 385 years old. And another, a trifle less than five feet thick at the stump, was 784 years of age. I saw a raft of this spruce that had been brought here from one of the neighboring islands, three of the logs of which were a hundred feet in length, and nearly two feet in diameter at the small end. But the average height of full-grown trees is probably not more than eighty or ninety feet, and diameter at the ground, two feet, or perhaps a little less.

THE HEMLOCK.

The other species of the beautiful hemlock, spruce (*Abies Menziesiana*). It is more slender than its companion species, but nearly as tall, and the young trees are more graceful in habit, and the timber is softer, and though very abundant, is seldom made use of for any purpose, where any other may be had. Of the other species found in these forests, but forming only a small portion of the whole, the most noteworthy is the grand arbor vitae (*Thuja gigantea*), called red cedar hereabouts. It is distributed all the way up the coast from northern California, to about latitude 55 degrees. From the soft, easily-worked boles of this tree the Indians make their fine canoes, some of them large enough to carry fifty or sixty men. A specimen huddled out of a single log cut on the west coast of Vancouver Island, sixty feet long, eight feet wide, and four feet deep.

PINES AND COTTONWOODS.

Of pines I have seen only one species (*P. Contorta*), a few trees of which, fifty or sixty feet high, may occasionally be found about the open edges of lakes and bogs. In the interior, beyond the mountains, it forms extensive forests. Cottonwoods, two or three feet thick, and from forty to sixty feet high, grow on beds of flood-soil along the banks of the larger streams.

FIRS--HARDWOODS.

A fir like *Picea Grandis* is common on the mountain slopes of the mainland. It is usually quite small however, seldom found to exceed a height of 60 or 70 feet, and the timber is of a very inferior quality. And up on the cold canyon sides along the banks of the glaciers, there is a very handsome little spruce like the Williamson of the upper forests of the Sierra. The only hardwood I have seen in Alaska is alder, maple, wild apple and birch--one species of each. The birch grows mostly on steep declivities well back in the Coast Range in company with spruce and fir. The largest specimens are about forty feet high and a foot thick. The other species are found only about the margins of the main forests. The trees are quite small, mostly about eight or nine inches in diameter or less.

EXTENT AND VALUE OF ALASKAN FORESTS.

It appears, therefore, that, with the important exception of the yellow cedar, timber trees for every use, as good or better in quality, abound in California, Oregon, Washington Territory and British Columbia, while those sources of supply are all nearer the markets of the world. And it will only be after those are exhausted on the more accessible portions

of the coast that these grand Alaska forests will to any considerable extent be made available. Seward expects Alaska to become the breadbasket of the world. So it may a century hence. In the meantime this supply will keep. These Alaska forests are not threatened with fire, or any other destruction dependent on the agency of man. They are too wet to burn. I have never yet seen a tree of fire in all these woods. The roots are set in a deep sponge of wet mosses, kept saturated by the abundant rains that fall throughout all the seasons, so that running fires are impossible here while the climate remains as it is. Beyond the mountains in the interior forests the conditions are different--less rain and greater summer heat--so that these woods are oftentimes scourged with fires as destructive as those that sweep the forest belt of the Sierra. In the vast region drained by the Yukon the principal tree, according to Kellogg & Dall, is the white spruce (*Abies Alba*). I saw it on the Arctic divide, near the headquarters of the Yukon. It is an exceedingly slender tree, spire, erect and closely clad with short, leafy sprays, forming the sharpest and most arrow-like apex I ever saw in any forest. The tallest are about 125 feet high. Some of this inland timber may sometimes be made available for ship spars by floating it down to tide water; but centuries will probably elapse before this time of need will come.

The coast and island forests of this south end of Alaska wear a grayish brown or color in the foreground, black in the middle ground and dark blue in the distance. The gray and brown is derived from lichens that depend from the branches, and from mosses that grow not only on the boles, but form large nest-like masses on the horizontal palmate portions of the branches fifty or even a hundred feet above the ground. It is only where snow and rock avalanches have occurred that a bright grass-green is seen.

A FOREST PEST--THE "DEVIL'S CLUB."

Landing almost anywhere to take a walk in these woods you have first to fight your way through a fringe of bushes tediously intertangled--rubus, huckleberry, dogwood, willow, elder, etc., and a strange looking woody plant about six feet high, with limber, rope-like stems and a head of broad leaves spread out horizontally like those of a palm. Both stem and leaves are covered with keen spines, so that it is impossible to grasp it anywhere without getting a multitude of thorns in the flesh. This is *Echinopanax horrida*, popularly known as the Devil's Club, and used by the Indians to thrash witches--the most terribly disbelieved of the natives. It is the only plant that seems to grow out of place here, and rather, from its vine-like leaning stems and heads of ample translucent leaves, to belong to the tropics. Back in the shady depths of the woods the ground is covered with a thick felt of mosses but little roughened by bushes of any kind, and not a single willow you see of bird, beast or man on this yellow, elastic carpet, not even those of the deer or bear that inhabit these woods; for on account of the obstructions offered by fallen trunks and a network of bulging roots, the animals follow the waterways, leaving the woods virgin. But when from any cause they are traversed, no visible track is left, any more than if they had walked in the air.

AGE OF ALASKA.

From the universal distribution of the woods one would be led at first sight to suppose that Alaska was an old country, considered with reference to its regeneration at the close of the glacial period, and that it had been long expected to the disintegrating action of post-glacial forces, and had thus been covered with soil and then planted with trees. But, on the contrary, Alaska is a very young country, and its forests are mostly set on solid rock that had but just emerged from beneath the ice-sheet. The existing forests on so bare a surface is possible only in a wet and temperate climate like this. As soon as the ice leaves the rock it is covered with moss, a deep, bossy blanket of it, in which the tree-seeds find lodgment, and grow and the sprouts together into a tree, and thus one supports the other, and thus with a little anchorage here and there in fissured spots they are enabled to stand on steep slopes even, without any soil about their roots, or covering of any sort save the damp mosses. On the very steepest and smoothest declivities the whole sod of trees will at times give way and slip down in a heap to the foot of the wall. But on the ruins another and another growth is built, until the whole is covered. One has only to go to the banks of the existing glaciers to see this forest work done.

Give to Alaska the climate of California, and these evergreen islands and shores would be treeless, sun-beaten rocks. JOHN MUI.