

WORLD'S GREATEST FORESTS

Stand of Merchantable Timber in Oregon Aggregates Over 335,000,000,000 Feet—Review of Lumber Trade.

ESTIMATES made specially for The Oregonian's annual number show that in the year just ended the sawmills of Oregon cut 283,565,000 feet of lumber, valued at \$3,945,900. This is the first time in the history of the state that the lumber cut has so closely pressed the 1,000,000,000-foot mark. In Washington the cut was 1,300,000,000 feet, valued at \$11,000,000. The total cut of the two states, 2,583,565,000 feet, valued at \$35,890,900. Washington's 5,000,000,000 shingles, valued at \$7,000,000. In Oregon the figures of lumber manufacture by counties have been furnished by firms connected with the industry. The Washington figures are the estimates of the West Coast Lumberman, of Tacoma.

While the demand for lumber kept the mills busy, the year was not a satisfactory one for the manufacturers. Prices ruled low, while logs were high, and the margin of profit was about equally divided between the logger and the consumer. Ocean freights ruled high except for the short period of the dull season in wheat exports. Building activity all along the Pacific Coast was one of the saving features of the situation. Rail shipments, which had dragged a bit in the early months of the year, sprang up with the opening of Spring, and March's shipment of 2294 carloads broke the record for Portland. Three times afterward the March record was broken—in April, with 1453 carloads, in May, with 1466 carloads, and in June, with 1288 carloads. April found Eastern buyers showing a tendency to hold off until they were satisfied that prices would be maintained. Most of the mills, however, were well filled up with old orders, and the new business offering was sufficient to keep the plants running all full time. In May the car trade touched its top notch with heavy cargo shipments foreign and coastwise, and a strong demand in California. The East sent in a steady call for the large timbers that only the Pacific Coast can supply. The annual car shortage set in in June, much earlier than usual, and complaints came from every lumber shipping center. The Portland mills were all but excluded from the Utan trade on account of this shortage. In the last few months of the year the Oregon mills were handicapped in the California market on account of the lack of cars. The teamsters' strike in San Francisco in the Summer was a serious disturbance to trade, as it was practically impossible to handle lumber in the California port. Coast mills that ship their product to San Francisco by vessel were forced to shut down. Business in the Fall months was good, but prices continued low, and the car shortage kept down trade. The box and sash and door plants were crowded with orders.

The growth of the Chinese lumber trade in 1901 was remarkable. As the complete figures for the year will not be available for some time, reference is made to the shipments for the first six months. Oregon, Washington and British Columbia are, of course, the largest shippers, California sending only an occasional cargo of redwood. Total shipments of lumber to China in 1901 were 26,781,000 feet. Of this amount Washington contributed 17,575,000 feet, and Oregon 7,282,303 feet. For the six months ended June 30, 1901, Portland shipped to China 14,361,525 feet, compared with 5,823,822 feet in the same period of 1900. Washington's China shipments for the first six months of 1901 aggregated 10,234,000 feet, compared with 7,672,749 feet in the same period in 1900. British Columbia's shipments to China for the first six months of 1901 were 1,985,441 feet, making the shipments from Oregon, Washington and British Columbia for the six months 26,781,000 feet, a little more than was shipped in 1900.

Various Uses of Oregon Timber. Manufacture of lumber, rough or dressed, is not the only use to which the timber of Oregon can be put. In the forests may be found any variety of trees for the making of superior furniture to say nothing of developing shipbuilding as a great industry. Then the enlargement of horticulture opens a big field for boxes, Oregon annually uses between 25,000,000 and 40,000,000 feet of lumber, principally spruce, for this purpose, and the possibilities in the line of box-making are great. Hemlock is good for boxes and is used also for paper manufacture. Kiln dried hemlock tested by a Government expert showed a specific gravity of 22.60 pounds to the 1000 feet. Southern Oregon uses sugar pine and Eastern Oregon yellow pine for boxes. Hemlock is valuable also for tanning purposes. An unofficial test of Oregon hemlock showed 17 per cent of tannic acid. Eastern oak, which monopolizes this field, shows but 10 per cent and Eastern hemlock goes as low as 7 per cent. The making of hoops is another big live industry along the Coquille River, and the annual product is about 3,000,000. White cedar forms one-sixth of the raw material and hardwood the remainder. Oregon, by reason of its large supply of timber offers extraordinary inducements the building of wooden vessels. A. T. Keiller, of Salem, recently visited the shipyards at Bath, Me., and returned convinced that Oregon can distance Maine in shipbuilding. Bath buys its materials from Maine, Canada, Oregon and Florida. Southern pine costs laid down at the yards, from \$3 to \$9 a thousand feet. Tamarack knees and top timbers are hauled from Michigan, Wisconsin and Canada on a 2-cent freight rate. The saws are Oregon pine and they cost from \$400 to \$500 each, with jibbloms and bowsprits in proportion. Labor and some classes of material, notably iron, are higher in Oregon than in Maine, but the cheapness of lumber more than equalizes conditions. At a recent test by Naval Constructor Hibbs at Bremerton, Wash., of the relative strength of Oregon pine against yellow pine from specimens taken from Puget Sound and Gray's Harbor, the following results were obtained: In the first test the stick of fir withstood a breaking strain of 9669 pounds; the yellow pine broke at 10,660 pounds. In the second test the fir broke at 8319 pounds and the pine at the same pressure. In the third and last test the native wood succumbed at 9660 pounds and the pine at 7640. Thus it will be seen that the native wood held its own with the wood from the South. In the tensile tests each stick was placed in a lathe and the center turned down to a spindle only one inch in diameter. At each end was left a large knob to furnish a grip for the clutch. In the first test the fir yielded to a pulling strain of 15,200 pounds and in the second to a strain of 15,300 pounds and in the last test to a strain of 15,000 pounds. In each instance the specimen did not break, but the fiber was pulled out, leaving a hole at each end of the stick of the same size as the spindle. The best sample of the yellow

Table with 2 columns: Location, Feet. Rows include Coast ranges, West slope Cascades, East slope Cascades, Eastern Oregon.

Table with 2 columns: Month, Feet. Rows include July, August, September, October, November, December, January, February, March, April, May, June.

Table with 2 columns: Country, Feet. Rows include Australia, Africa, Germany, Great Britain, India, Russia, Society Islands.

Table with 2 columns: Month, Lumber ft., Shingles. Rows include July, August, September, October, November, December, January, February, March, April, May, June.

Table with 2 columns: Month, Lumber ft., Lath, Shingles. Rows include July, August, September, October, November, December, January, February, March, April, May, June.

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Table with 2 columns: Species, Feet. Rows include Douglas, Giffard, Grand, Harney, Jackson, Josephine, Klamath, Lake, Lincoln, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Tillamook, Umatilla, Union, Wallowa, Washington, Wasco, Yamhill.

Table with 2 columns: County, Area, sq. m., Board meas., Timbered Feet. Rows include Baker, Benton, Clatsop, Clackamas, Columbia, Crook, Curry.

Table with 2 columns: Species, Feet. Rows include Fir, Spruce, Cedar, Hemlock.

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and Wallowa. There are about 55,000 square miles of timber land in Oregon, most of it being on the western slope of the Cascade Mountains and of the Coast Range. This forest would yield from 20,000 to 200,000 feet per acre. The estimate of the different species of merchantable timber in Oregon is as follows:

Table with 2 columns: Species, Feet. Rows include Yellow or red fir (Oregon pine), Spruce, Hemlock, White pine, Sugar pine, Noble fir, Silver fir, Red cedar, White cedar, Tamarack, White fir, Miscellaneous—oak, ash, maple, etc.

One-eighth of the timber lands has been burned over. Two years ago it was not known there was any redwood in Oregon, but in Curry County there are 1000 acres. There are billions of feet of lumber of the smaller woods used for finishing and cabinet purposes. The varieties are maple, myrtle, ash, black oak, white oak, live oak, tan bark oak, madrone, dogwood, wild cherry, yelder, willow, birch, hawthorn, crabapple, barberry and manzanita.

At the low valuation of \$5 per thousand feet of manufactured lumber, the standing timber of Oregon represents on the basis of Mr. Johnson's estimate an asset, available at some time, of nearly \$2,500,000,000.

In Western Oregon the merchantable timber consists of red fir, Sitka spruce, cedar and hemlock. Besides these there are found in the southwestern part of the state sugar pine, noble fir and yellow pine. By far the greatest part of the timber of Western Oregon consists of the red fir. It occupies the entire timbered portion of the depression between the Coast and Cascade Ranges, with the eastern slope of the former and the western slope of the latter. Throughout most of this area it forms more than three-fourths of the forest, but becomes less in proportion near the southern boundary of the state. The distribution of cedar corresponds in Oregon to its distribution in Washington, there being none in the valley, while upon the Coast Range and the Cascade Range, at middle altitudes, it forms a small proportion of the forest. It increases in proportion as the shores of the Pacific are approached.

The distribution of hemlock in Western Oregon is similar to that in Western Washington, there being none in the valley, while upon the western slope of the Cascade Range it forms a notable proportion of the forest, reaching its maximum at mid altitudes. In the Coast Mountains it forms also a notable proportion of the forest, and probably increases toward the Coast. The forests of Oregon east of the Cascade Range are composed largely of yellow pine. This species crosses the range a little north of latitude 44 degrees. Here, the western limit crosses the range and immediately runs northward down its slope, then turning to the south and southwest, it crosses the valley just south of Roseburg and passes into the Coast Range. Sugar pine enters the state from California, extending northward over the entire breadth of the Cascade Range, and probably nearly to the Coast, its northern limit running as far north as the latitude of Tillamook Bay is one of the grandest timber sections of the world, but lumber manufacture is retarded by lack of transportation facilities. In a report made to the United States Geological Survey, the author says that about 21 townships of good timber land are tributary to the bay. The estimate made of above timber lands is 6,000,000 feet to each quarter section, or total number of feet board measure of timber of 15,120,000,000. The above estimate has been made from the report or estimate of a number of persons who are considered competent cruisers of timber lands. Its value cannot be given here for the reason that the price paid for stumpage varies from 50 cents to \$2 per thousand feet board measure, depending largely upon the location of the timber and the facilities for shipping same.

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FORESTS OF WASHINGTON. Densest, Heaviest and Most Continuous in the United States. With the exception of the redwoods of California the forests of Washington are the densest, heaviest and most continuous in the United States. Except for a few prairie openings, and except where removed by fire or the ax, they cover the country as a thick mantle from high up on the Cascade Range westward to the Pacific. In all this region only the Olympic range and the high mountains are considered competent cruisers of timber lands. The trees are large, reaching 12 and 15 feet in diameter and 250 feet in height, with clear trunks for 100 or more feet. The timber is mainly red or yellow fir, mingled with spruce, hemlock and cedar.

The United States Geological Survey estimates the total amount of standing timber in the state to be in the neighborhood of 14,775,000,000 feet, board measure. Of this amount more than six-sevenths, or 104,000,000,000 feet are west of the crest of the Cascades, the remainder, 10,000,000,000 feet, being upon its eastern slope, in the northern and eastern portions of the state. This total is much less than that of Oregon, which is explained by the following considerations: The wooded area is not so great, that of Oregon being 64,300 square miles; that of Washington being 47,000 square miles; a considerable part of Washington, in the Cascade Range and the Olympic Mountains, is at great altitudes, upon which the timber is very scattering; much of the eastern slope of the Cascade Range, especially in Okanogan County, is covered with a very sparse growth of timber, although it appears as timber land; the lumber industry in Washington was until recent years much more important than in Oregon, and consequently a much larger area has been cut and burned.

The distribution of the lumber trees of Washington is simple: West of the Cascade Range the country, with the exception of the high mountains, is occupied in the main by four species—red fir, cedar, hemlock and spruce. The forests west of the higher part of the Cascades are composed of 84 per cent of fir, 18 per cent of cedar, 4 per cent of hemlock and 6 per cent of spruce. Towards the coast the proportions of cedar and spruce increase. Upon the mountains the fir disappears and hemlock and cedar, especially the former, increase greatly in proportion. In this region the fir is by far the most valuable tree, and while other species occurring with the fir are used, areas which do not contain fir are regarded as present as of little value. High up in the mountains only sub-alpine species occur. East of the mountains the timber consists almost entirely of lodgepole and yellow pine, with some white pine in Stevens County in the northeastern part of the state. A little fir also is found at the eastern base of the range, scattered through the pine forests.

Stand in the Counties. The following table gives the estimated amount of merchantable timber in each county, according to the best obtainable information, based upon cruises and other data. If it were cut by the practice which prevails at present, these figures represent a close approximation to the amount which would be realized. There is no question, however, that, as

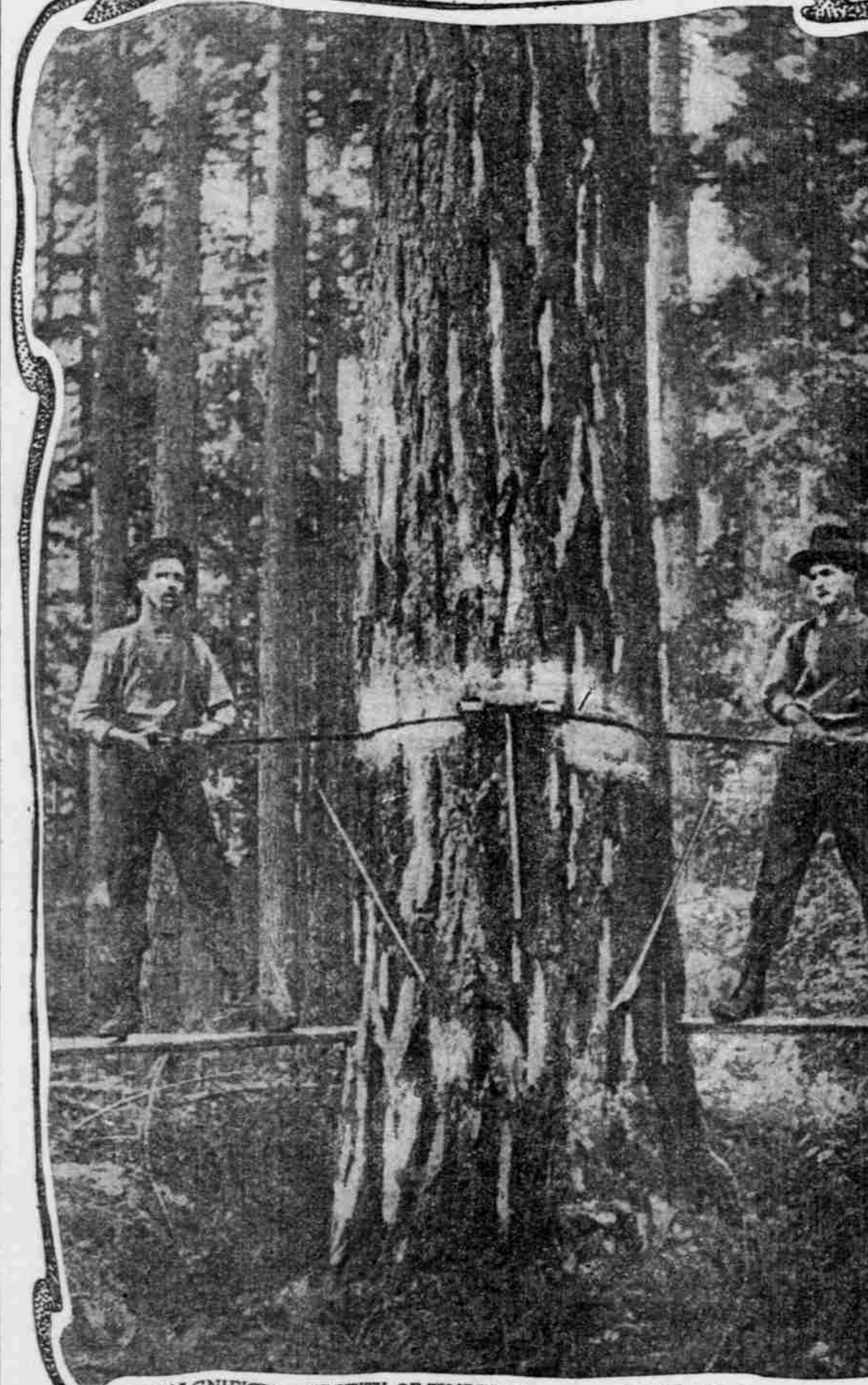
Table with 2 columns: County, Feet, board meas. Rows include Asotin, Behlmer, Blaine, Bly, Buckhorn, Burns, Cascade, Clatsop, Clackamas, Columbia, Crook, Curry, Deschutes, Douglas, Gilliam, Grant, Harney, Jefferson, Josephine, Klamath, Lake, Lincoln, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Tillamook, Umatilla, Union, Wallowa, Washington, Wasco, Yamhill.

Table with 2 columns: Species, Feet, board meas. Rows include Fir, Spruce, Cedar, Hemlock.

The distribution of the different species recognized as lumber in Washington, follows a few definite and simple laws. On the west shore of Puget Sound the forest is practically pure fir. Southward as far as the Columbia River, throughout the valley of the eastern slope of the Cascade Range, the proportion of spruce increases as one ascends the Cascades. The proportion of cedar is equally characteristic. There is practically no spruce on the Cascade Range or on its eastern slope. It is more abundant immediately upon the Pacific Coast and diminishes thence inland. Cedar there is scarcely any to be found on the islands and the west coast of Puget Sound, and but very little in the valley to the southward. It increases westward toward the coast, and reaches a maximum immediately upon the coast. The east coast of Puget Sound contains a large proportion of cedar, ranging from one-fourth to one-half of the forest, and the proportion diminishes as one ascends the Cascades. Hemlock is almost entirely wanting on both shores of Puget Sound and in the valley to the south. It increases westward and forms a noticeable proportion of the forests in the Cascade Range and in the northwestern part of the Olympic peninsula. It increases also as one ascends the Cascades.



EXTRA LONG TIMBERS BY RAIL



THE MAGNIFICENT GROWTH OF TIMBER ON THE LANDS OF THE BOOTH-KELLY CO



BOOTH-KELLY CO'S MILL AT WENDLING

PHOTOS BY H. ROSS, EUGENE, O.

Table with 2 columns: MONTH, Lumber, Shingles. Rows include October, November, December, January, February, March, April, May, June, July, August, September.

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Washington Lumber Shipments. Foreign, coastwise and rail shipments of lumber from the State of Washington for the year ended June 30, 1901, aggregated 719,927,047 feet, compared with 715,432,225 feet in 1899-1900. The year was the best on record for foreign account. This is noteworthy, as freights were relatively high most of the year, and carriers were scarce. The new year is full of promise for good export business. Demand, particularly for China and Russia building account, may prove a big item.