

of the sound saw immense volumes of smoke and flame suddenly burst forth from the summit of Mount Augustine, which rendered the sky obscure for several hours afterward. Soon after the explosion great quantities of pumice dust began to fall. Some was fine and smooth, some coarse and gritty. On the afternoon of the same day, at 3:30 o'clock, an earthquake wave, thirty feet high, came rushing in over the hamlet, sweeping away all the boats and deluging the houses. Fortunately the tide was low at the time, or otherwise the whole settlement would have been in danger of destruction. Two other waves, each about eighteen feet high, succeeded, followed by others, not so high, at irregular intervals. Some idea may be formed of the magnitude of this disturbance when it is stated that the shower of pumice ashes so darkened the atmosphere that it was found necessary to light candles during the day. Moreover, the ashes fell to the depth of five inches. That night the surrounding country was illuminated by flames from the crater.

It is worthy of notice that the summit of Mount Augustine is far above the snow line, and is usually, as a matter of course, covered with snow; but during the past year it has been entirely bare. The inference, therefore, seems to be that there had for a long time been a great increase of temperature within the mountain before there came an explosion. This fact is worthy of some consideration.

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#### OUR INDUSTRIES AND RESOURCES.

##### II.

THE mills of Portland and vicinity saw 75,000,000 feet of lumber per year. Those on or near the Columbia River, west of the Cascade Mountains, saw about 75,000,000 more. The Puget Sound merchant mills saw 300,000,000 feet annually, and the coast merchant mills at least 50,000,000 feet per year. These are the estimates of men in the business, who have means of knowing what they affirm. These estimates do not include the mills of the interior valleys, which supply chiefly their own local markets, as many do on the upper branches of the Willamete, Rogue, Cowlitz, Chehalis and other rivers. Five hundred million feet represent the output for foreign shipment and home consumption. They are sent to the market mostly in the rough sawed condition, except that flooring, rustic and finishing are planed and grooved, which adds 50 per cent. to the value. The average rates of price are from \$10 to \$30 per 1,000 feet. One lumberman has sold all his product—5,000,000 feet—at \$18 per 1,000 feet for several years. Another rates the average sales of 100,000,000 feet at \$14 per 1,000 feet, making an income of \$1,400,000, less the cost. With the completion of the Northern Pacific Railroad the market is less brisk, but the steady demands will increase, though at lower rates, perhaps, for a year or two.

Spring, summer and autumn are the best seasons for logging. In some camps railroads and steam engines are taking the place of skid roads and teams. One logger paid \$1,500 for tallow to grease the skids one year for the haul of 5,000,000 feet of logs, worth \$35,000. Steam

engines will draw the logs from three to four, and perhaps ten or fifteen, miles to river or bay, at no greater cost than ox teams have done it one or two miles.

The demand has always been for the best clear lumber. Skilled woodsmen select such trees and use only the choice cuts for their booms. Sections of dense, tall yellow firs have been eagerly sought near the river banks and shores of bays, and for twenty-five years they have been the sources of supply. A second culling has been made in the same camps in many places, and a third culling may be made years hence, with good results, ere the land will be cleared of all timber, which would be counted valuable in interior settlements, in the Mississippi Valley or in the Atlantic States.

Forest fires have destroyed in thirty years more than the lumber mills have used. The burned districts along the foothills of the Cascades, on the gravel plains beyond the Chehalis, on parts of the Coast Range in Polk, Benton and Lane counties, are overgrown with bushes and fern, among blackened trunks of former grand forests. Yet on large sections along the Columbia and scores of miles back on both sides, and along the ocean coast for 600 miles, dense evergreen forests of valuable timber cover nearly all the plains and hills to the mountain crests. The supplies along most of the shores of Puget Sound have been cut off only two or three miles inland, while the regions beyond remain mostly unbroken.

Fir ranks all the rest in amount, in grandeur of growth and strength of tension. Cedar commands the best market for all finishing. Spruce is fast coming into use. Hemlock is in reserve for tanning. Ash, maple and oak supply furniture manufactories. The annual sales have increased from a few hundred thousands to 500,000,000 feet. It is easy to overstock the markets of the Pacific, and mills are combined to limit their products to the demands of trade. Full yards in San Francisco, Chile or China call for shorter time at the mills, while clean yards below mean a run day and night at the mills.

The 500,000,000 product of 1883, at \$14 per thousand, give \$7,000,000 for distribution. Of this annual income it is estimated that—

Labor, logging and sawing, receive one-half .....	\$3,500,000
Stampage receives 50 cents per M .....	250,000
Towage or hauling, 50 cents per M .....	250,000
Interest on mill plant, 10 per cent .....	500,000
Wear and tear of machinery .....	500,000
Net gain, \$4 per M .....	2,000,000
Total .....	\$7,000,000

This sum in circulation gives vitality to large business enterprises, builds up cities and makes thriving communities. As a medium of exchange it is worth ten times the amount.

Judging from the past, the foreign and California markets will require larger supplies annually. The treeless plains of the interior, now filling with agricultural settlements, will demand untold amounts of lumber from this western region. New industries of many kinds will add to these demands. The Eastern lumbermen already come to test the possibility of a supply for them. One