A thorough canvass of the producers of minor timber products in Oregon and Washington has brought together for the first time authoritative statistics as to quantities of each currently produced. This information is valuable in gauging the importance of these industries, the trend in production and consumption, their relation to the major timber industries, and their effect on forest supplies and forest welfare.

This issue of FOREST RESEARCH NOTES, therefore, presents a digest of the comprehensive report resulting from the study. Those who are interested in further details than presented below are invited to correspond with this Station.

THE PRODUCTION AND CONSUMPTION OF MINOR TIMBER PRODUCTS IN OREGON AND WASHINGTON, 1930

The so-called minor timber industries of Oregon and Washington include those engaged in the production of poles, piles, forest fuelwood, fence posts, forest pulpwood, hewed ties and timbers, shingled bolts, veneer blocks, excelsior bolts, round and split mine timbers, and cascaras bark.

A survey by the Section of Forest Products of the Pacific Northwest Forest Experiment Station showed that the actual wood volume entering into these products in 1930 for the two States was about
213,101,544 cubic feet, the equivalent of approximately 1,165,000,000 board feet. This is equivalent to 12 per cent of the wood volume of the 1929 lumber cut of this region. The estimated value of these minor timber products was $16,500,000.

Douglas fir supplied about 65 per cent of the wood volume consumed for minor timber products, or 138,056,383 cubic feet; 43 per cent of this was cut from thrifty second growth timber.

**Poles**

The pole production in Oregon and Washington in 1930 amounted to 332,935 pieces or 12,740,465 lineal feet; 44,953 pieces in Oregon and 287,982 pieces in Washington. The wood volume entering into pole production for the two states was 8,146,789 cubic feet, or about 32,648,440 board feet. Western red cedar supplied 88 per cent of the poles, Douglas fir 11 per cent, and Port Orford cedar the remainder. Poles 30, 35 and 40 feet long constituted nearly two thirds of the production; Douglas fir supplied 51 per cent of the poles 60 feet and over in length.

An appreciable quantity of western red cedar that has been killed by fire is suitable for poles. Specifications, however, admit only poles cut from live timber. Tests have shown that poles cut from dead trees are equally as serviceable as those cut from live trees if they are sound, uninjured by insects, and have not checked excessively.

During the past few years there has been a marked decrease in the pole production of these states attributable to the depletion of cedar stands of suitable size and quality. On the other hand there has been an increase in Douglas fir pole production in western Oregon and Washington. Although heavier, Douglas fir poles are stronger, and when given a preservative treatment, equally as durable as cedar. This, together with the abundance and the long lengths obtainable, suggests that Douglas fir will be increasingly used for poles as the supply of cedar decreases.

**Piles**

The pile production of Oregon and Washington in 1930 amounted to 146,943 pieces, or 7,942,287 lineal feet; 114,540 pieces in Washington, and 32,403 pieces in Oregon. The total wood volume entering into piles amounted to 7,117,093 cubic feet, or 33,613,980 board feet. Of the total lineal feet produced about 86 per cent was Douglas fir, 11 per cent western red cedar, 2 per cent western hemlock, and the remainder Port Orford cedar, western larch, and Sitka spruce. On the basis of number of pieces, piles over 60 feet long comprised more than 27 per cent of the production, 60-foot piling 11 per cent, 50-foot, 14 per cent, and 40-foot, 13 per cent.
More than 90 per cent of the output of piles in this region is produced west of the Cascade Range. The chief producing sections include the Puget Sound, Columbia River, and Willamette Valley regions. The Puget Sound region produced about 55 per cent of the output, while western Oregon as a whole produced only about 20 per cent.

With an abundant supply of timber of exceptional piling quality, western Oregon and Washington should always produce large quantities of piles.

**Forest Fuelwood**

The consumption (production) of forest fuelwood in Oregon and Washington in 1930 amounted to 1,798,076 cords, valued at $10,036,969; Oregon 945,275 cords, and Washington 852,803 cords. The total wood volume, on the basis of 90 cubic feet per cord, was nearly 162,000,000 cubic feet.

The species used included nine softwoods and eleven hardwoods. Douglas fir supplied 77.6 per cent of the production, ponderosa pine, 12.4 per cent, western larch 5.5 per cent, oak (largely Oregon white oak) 3.4 per cent, with the remaining 3.1 per cent made up of miscellaneous species.

It is estimated that 95 per cent of the fuelwood cut in this region is from live timber. The Douglas fir stands of western Oregon and Washington supplied about two thirds, with nearly half of this cut from thrifty second growth, potentially valuable for sawtimber.

The outstanding trend in forest fuelwood production is the increased use of second growth Douglas fir. It is anticipated that still further increases in the use of this class of timber will follow as the available old growth timber becomes more scarce. Another noteworthy trend is the increased consumption of other fuels, particularly in the larger cities and in those sections marked by the earliest logging operations. In these localities coal, oil, gas, electricity, hogged fuel, and sawdust are supplanting forest wood to a noticeable extent.

**Round and Split Fence Posts**

On the basis of the reported production by commercial operators and the estimated farm requirements, the total annual post production in Oregon and Washington in 1930 was 5,594,650 pieces, approximately equivalent to 5,800,000 cubic feet of solid wood material. Western red cedar supplied about 81 per cent of the posts produced, western larch 10 per cent, Douglas fir 4 per cent, with ponderosa pine, oak, western junipor and other species making up the remaining 5 per cent.
Forest Pulpwood

The reported production of forest pulpwood (cordwood size) in these states in 1930 was 256,150 cords; Oregon 90,277 cords, and Washington 165,873 cords. The total solid wood volume consumed in this form was 23,055,500 cubic feet. Western hemlock supplied about 50 per cent, "white" fir 25 per cent, Sitka spruce 17 per cent, and black cottonwood 8 per cent. A small amount of Douglas fir was also used.

Although statistics give no indication of the extent to which forest pulpwood has been used in this region in the past, it is evident that the 1930 production greatly exceeds that of previous years. Under present economic conditions, with many of the logging operations and sawmills closed down and others with greatly curtailed output, it is expected that the consumption of this form of material in 1931 will greatly exceed that of 1930. There are two conditions suggesting an increased production of this class of material in the future; (1) each year logging operations are being pushed back to the less accessible timber in the more mountainous regions with a resulting increase in production and transportation costs, and (2) there are in the aggregate large quantities of available material that can be taken out in cordwood form at a relatively low cost, but which are too small or scattered to remove as sawlogs. Present pulpwood production is confined almost exclusively to timber of this character.

Hewed Ties and Timbers

In 1914 the hewed tie production of Oregon and Washington amounted to 691,975 pieces or 25,274,000 board feet, which was only about 8 per cent of the total tie production at that time. The production in 1930 was about one sixth that of 1914, or 121,690 pieces. Inasmuch as the total tie consumption in these states has not decreased since 1914, these figures indicate the trend toward sawed ties.

In the 1930 hewed tie production, Douglas fir accounted for about 50 per cent, lodgepole pine 38 per cent, Port Orford cedar 9 per cent, and western larch and western hemlock the remaining 3 per cent.

The production of hewed timbers in 1930 amounted to 383,890 board feet, all Douglas fir.

The decreased use of hewed ties and the increased use of sawed ties is in some respects a desirable change. The production of hewed ties if confined to improvement cuttings through the removal of only those trees of sufficient size to allow for hewing, would in many instances be a desirable form of utilization, particularly in the second growth stands of the Douglas fir region. Increased growth of those trees of a high potential lumber value would follow the removal of the
smaller, more or less suppressed individuals. However, as practiced, too often the larger, more thrifty trees are cut with the result that butts and tops, too large and too limby for hewing but containing much merchantable material, are left unutilized in the woods, which would not be the case in a sawed tie operation. Also the excessive amount of chips resulting from hewing such sized timber creates an increased fire hazard.

Shingle Bolts

The western red cedar shingle bolt production of this region in 1930 amounted to 17,672 cords; Washington 15,982 cords and Oregon 1,690 cords. This constituted less than 2 per cent of the total material entering into shingles.

Although in the past, large quantities of shingle bolts have been produced, this industry is now limited mainly to the salvaging of such material as can not be economically taken out as logs. With the bulk of the shingles now produced by mills operated as a unit of the more complex sawmill operations or mills located near the principal log markets of the region, it is anticipated that the shingle bolt industry will continue to be of minor importance.

Veneer Blocks

Veneer block production in Washington in 1930 amounted to 26,107,000 board feet, log scale. No material was reported as produced in this form in Oregon. On the basis of 1929 statistics, the material purchased as blocks in 1930 was less than 12 per cent of the total log consumption of these states for veneer. Douglas fir constituted about 93 per cent of the veneer block production, black cottonwood 4 per cent, Sitka spruce slightly less than 3 per cent, and bigleaf maple about one half per cent. The usual length of the blocks was 66, 72, 78, 91, and 102 inches.

The general trend in the veneer industry is to purchase logs in long lengths. A number of plants formerly purchasing large quantities of blocks have either discontinued this practice or limited such purchases to small amounts.

Excelsior Bolts

A survey of the excelsior industry for 1930 showed a consumption of about 2,500 cords of bolts in Oregon and 2,000 cords in Washington. Black cottonwood is the favorite excelsior wood in this region, though Sitka spruce and white fir have been used to a limited extent. Excelsior is now manufactured by two companies in Oregon and two in Washington. Production has decreased considerably since 1910, the industry in that year consuming 13,400 cords of bolts.
Round and Split Mine Timbers

The production of round and split mine timbers in this region in 1930 amounted to 1,106,900 cubic feet; 128,000 cubic feet in Oregon and 978,900 cubic feet in Washington, all Douglas fir. Included in the production in Washington is 145,000 cubic feet of converter poles used in the reduction of copper ore.

Shipments without the region, mostly foreign export, amounted to 686,500 cubic feet. In these shipments, the minimum allowable top diameter was 4 inches, and the maximum butt diameter 10 inches, and the lengths varied from 18 to 24 feet.

Cascara Bark

In 1930 there was produced in these states 4,116,000 pounds (2,058 tons) of dry cascara bark; Oregon 2,150,000 pounds and Washington 1,966,000 pounds. It is generally thought that bark production in 1930 was considerably above the average because of the scarcity of other work.

Cascara bark in this region is marketed not only to the drug companies of the United States, but considerable quantities are also sold throughout Europe, with England and Germany taking the bulk of that exported. Shipments are also made to France, Italy, Austria, and several other countries. In 1930 there was exported from Portland, Oregon, 478,951 pounds, from Tacoma, Washington, 280,000 pounds, and from Seattle, Washington, 24,000 pounds.

Destructive peeling methods and agricultural development have resulted in the destruction of the greater portion of the original cascara stands. Although the trees are prolific in seed production each year, the reproduction resulting is not as extensive as in past years. Cascara needs abundant light for its development as well as suitable soil conditions. Many of the areas formerly supporting cascara trees have now grown up to the other hardwood and softwood species. The lessening of areas open enough, also agricultural development of the more favorable sites, has decreased to a marked degree the natural regeneration.

A number of small cascara plantations have been started, with results indicating that this species can be grown successfully insofar as growth and bark yield are concerned. However, the extent to which profits can be derived from such plantations is questionable. It is predicted that the price of bark will never increase to any great extent due to the competition of mineral compounds for similar medicinal uses.
The Minor Timber Industries and Forestry Practice

With the economic well-being of Oregon and Washington largely dependent upon the lumbering industries, particularly in the Douglas fir region, it would seem that any measure looking toward the conservation of the second growth stands has a very important bearing on the future stability of these industries, both major and minor. At the present time many of these second growth stands are exploited for both minor products and sawlogs without particular regard for the future of the forest. Thinning and improvement cuttings under a well-developed forest management plan would in many instances yield a variety of the minor timber products which are now obtained only through the sacrifice of timber which has a much higher potential value.

Properly executed thinnings will materially accelerate the growth of the stand giving each tree the ideal amount of growing space. Under intensive management, it is entirely possible to get about half as much timber volume out of periodic thinnings as an unthinned stand would produce at maturity. Such thinnings would be suitable for poles, piling, cordwood, forest pulpwood, ties, mine timbers, fence posts and even small-sized sawlogs.

Studies have shown that there are large quantities of "waste" resulting from logging and lumber manufacture which are now unutilized. The quantity of this waste suitable only for fuel amounts to about 1,700,000 cords in logging operations, and 1,900,000 cords in lumber manufacture. The logging waste, other than that suitable for fuel, if it could be economically used, is sufficient to supply about 755,000 cords of pulpwood, 200,000 cords of shingle bolts, 176,000 poles, and 7,500,000 posts.

Although prevailing practice may imply that sawtimber operators can not compete in the production of minor timber products from this "waste" with operators who are cutting timber especially for these minor products, yet there is reason to believe that modification of sawtimber operations might make possible and profitable the cutting of more minor products from "waste" than is now done. The use of even a portion of the waste would reduce the drain on the standing timber resources of the region, and at the same time give sawtimber operators additional returns on the stumpage and manufacturing investment.

Herman M. Johnson
Assistant Forester
Amount of wood material used for minor timber products and their approximate value, Oregon and Washington - 1930

<table>
<thead>
<tr>
<th>Products</th>
<th>Commercial unit</th>
<th>Lineal ft.</th>
<th>Board ft.</th>
<th>Cubic ft.</th>
<th>Dollars</th>
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</thead>
<tbody>
<tr>
<td>Poles</td>
<td>332,935 pcs.</td>
<td>12,740,465</td>
<td>32,648,440</td>
<td>8,146,789</td>
<td>1,911,069</td>
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<tr>
<td>Piles</td>
<td>146,943 pcs.</td>
<td>7,942,287</td>
<td>33,613,980</td>
<td>7,117,093</td>
<td>635,383</td>
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<tr>
<td>Forest fuelwood</td>
<td>1,796,076 cds.</td>
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<td>--</td>
<td>899,038,000</td>
<td>161,826,840</td>
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<td>Fence Posts</td>
<td>5,594,650 pcs.</td>
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<td>22,826,168</td>
<td>5,706,543</td>
<td>671,358</td>
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<tr>
<td>Forest pulpwood</td>
<td>256,150 cds.</td>
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<td>--</td>
<td>128,075,000</td>
<td>23,053,500</td>
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<tr>
<td>Hewed ties</td>
<td>121,600 ties)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>5,018,870</td>
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<tr>
<td>Hewed timbers</td>
<td>383,890 bd.ft)</td>
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<td>5,018,870</td>
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<tr>
<td>Shingle bolts</td>
<td>17,672 cds.</td>
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<td>10,603,200</td>
<td>1,590,480</td>
<td>79,701</td>
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<td>Veneer blocks</td>
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<td>26,107,000</td>
<td>3,730,000</td>
<td>590,344</td>
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<td>Excelsior bolts</td>
<td>4,500 cds.</td>
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<td>2,250,000</td>
<td>405,000</td>
<td>31,500</td>
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<td>Mine timbers</td>
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<td>5,569,242</td>
<td>4,427,600</td>
<td>1,106,900</td>
<td>88,944</td>
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<tr>
<td>Cascara bark</td>
<td>4,115,000 lbs.</td>
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<td>--</td>
<td>252,960</td>
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<tr>
<td>Total</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1,164,608,258</td>
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