

one may find a stand where a valuable slow-growing species is liable to be shaded out by a poor, faster growing one. In this case it is preferable to prune the undergrowth rather than remove it altogether. We often notice trees which have been subject to unfavorable conditions showing signs of failing strength in their crowns. To remedy this, usually a good part of the lower limbs should be removed. This allows the tree to use all its nourishment to strengthen the crown, and in many cases this extra stimulus enables it to pass the danger point.

It is very seldom a tree is injured by the removal of dead branches. On the other hand, it may greatly reduce the danger from rot, as the tree soon covers over the opening with new layers of wood.

But a different state of affairs is met with in the pruning of green branches. Here the wound caused by the removal of the limb often

trunk. The best time for pruning is undoubtedly in the fall or early winter.

As so many of our eastern white pine woods are seriously affected by the pine weevil, attention should be called to it. The presence of the insect is first manifested by the wilting of the terminal shoot, which, if examined carefully, will be found completely mined by the insect larvæ. A tree thus damaged will fail for several seasons to send forth a terminal shoot, with the result that the lateral branches strive with one another to gain supremacy. It is at this point that the owner of the wood lot can materially aid nature in her efforts to again produce a normal tree. A limb should be selected to take the place of the leader, and in making a choice its thriftiness and relation to the tree should be considered. After a choice has been made all the other branches of the whorl should be removed, thus giving the newly-chosen leader every opportunity to develop. If the work has been judiciously done, the tree may again assume its normal shape in after years.

MICHIGAN'S LUMBER INDUSTRY.

BY OUR TRAVELLING REPRESENTATIVE.

The first day of February saw me "on the road" again, bound for Michigan, Wisconsin, Illinois, Missouri, Indiana, Pennsylvania and Ohio. Leaving Toronto I made stops at Hamilton, London, Chatham, and Windsor long enough to see that the lumber trade was flourishing at these points. A great many of the small dealers were anxious as to whether they would be able to get a supply this coming season—many preferring to wait until the mills were running before giving their orders.

Coming over to Detroit I visited many of the leading

two genuine snake rail fences, and miles upon miles of stump fences.

Statistics show that the lower peninsula of Michigan is now practically denuded of all its pine. Hemlock and hardwood is going the same way. Last year 1,846,104,979 feet of all kinds were cut in the state.

Mr. E. D. Cowles, of the Courier-Herald staff, Saginaw, is acknowledged to be the best authority on lumber statistics, having made it a special study for over 30 years. To him I am indebted for much information regarding Michigan's declining industry. His statistics show an instructive object lesson of the diminishing forest preserves of the state.

The last year has been a prosperous one for the lumbermen. While the output in the state fell off, the manufacture of hardwood and hemlock assumed large proportions. In speaking to Mr. Cowles he said:

"Twenty years ago a Michigan lumberman would not have recognized a hemlock log if met face to face on a skidway, there being no market for that timber, but conditions have changed and the output of hemlock the last two years has about equalled that of pine."

I asked Mr. Cowles as to the pine product, and he stated: "It is pretty nearly exhausted in the lower peninsula, but there is a large body of fine hemlock and hardwood timber available."

The prices for lumber in this state during 1902 and up to the present ruled firm, with an active demand during the entire year. The output of the state for 1902 was 717,183,671 feet of pine, 699,011,487 feet hemlock and 438,809,821 feet of hardwood. The shingle output was 1,545,231,000.

The production of lath for 1902 amounted to 303,311,000 pieces. The quantity of lumber in the hands of manufacturers and dealers at the close of the season was 197,877,000 feet. At the close of the year there was a comparatively small quantity of unsold lumber in the hands of manufacturers. Many of the dealers' yards that I saw were also denuded.

The high water mark for the production of lumber in Michigan was in 1881, the output that year exceeding four billion two hundred and ninety million feet. More



A TREE THAT HAS BEEN ATTACKED BY THE PINE WEEVIL.

becomes the point where fungi enter. The white pine has, however, peculiar methods for overcoming this evil effect. Shortly after the limb is removed the wound is covered by a gummy sap, which protects the cut from disease until it is able to heal over, so that in a few years after careful trimming we have practically a clean bole. Pruning, however, in a crowded stand, where the limbs die naturally to a considerable height, should be confined to the dead branches exclusively.

For a farmer the easiest implement to prune with is a good sharp axe; if wielded with accuracy, it is as good as a saw, as it leaves a smooth surface wound. Besides, pruning with an axe can be done more rapidly. It must, however, be carefully handled, as reckless cutting is apt to do considerable damage to the bark. It is a waste both of time and of energy to prune a tree above a height of eight feet, which is about as high as an average man can reach with an axe and cut carefully. The branches should not be pruned in such a manner that short stumps are left sticking out from the stem, but should be cut even with the

lumbermen of that city, all of whom greeted me cordially, and I was glad to make the acquaintance of Mr. Jas. Harmon, Geo. Morley & Company, Dwight Lumber Company and others, all of whom appear to be thriving.

Up at Port Huron I found the Pere Marquette Ry. making arrangements for their intercolonial trade. They will now run direct into Canada over their own line. They have ordered 5,000 new freight cars and 65 new locomotives, many of which will be delivered this month. Three additional car ferries with a capacity of 32 cars each have been ordered—two of them to run between Port Huron and Sarnia. Local dealers say this will facilitate the railway haul of lumber from Canada.

I reached Detroit a couple of days too late to attend the annual meeting of the Michigan retail lumberman, which I was very sorry to miss.

From Port Huron to Saginaw I passed through what was once an immense pine forest—now only blackened stumps indicated where once the giant pines stood.

Between Tappan station and Abbotsford there is considerable second-growth and scrub trees of various sorts—none of any great utility. Everything marketable appears to have been cut down. I passed one or

than words these figures show the steady decline since that year:

Year	Output (feet)
1881	4,202,189,914
1889	4,207,751,224
1891	4,185,707,849
1893	3,580,531,068
1895	3,794,250,754
1897	3,147,969,147
1899	2,730,067,861
1901	2,731,029,535
1902	2,166,252,982
1903	2,335,674,349
1904	2,158,343,122
1905	2,328,575,135
1906	2,349,951,918
1907	1,998,347,000
1908	1,846,104,979

There has been a corresponding increase in the lumber shipped from Canada to this state. One hundred and fifty million feet of Canada pine came to the Saginaw river alone in 1902.

The largest firm in Saginaw, Mereson, Schutte, Parker and Company, handled 95 million feet of pine lumber last year. They have 34 million feet of white pine left in stock, and have bought 50 million feet in Canada to be delivered this season.

The Saginaw Lumber & Salt Company, Booth & Boyd, Briggs & Cooper, etc., all do a very large

LUMBER PRODUCT OF MICHIGAN IN 1902.

	Pine cut, feet.	Hemlock cut, feet.	Hardwood cut, feet.	Total district cut, feet.	Shingles No.
Saginaw district	34,986,671	37,302,487	33,970,821	106,260,979	2,610,000
Lake Huron shore district	12,500,000	80,500,000	22,100,000	115,100,000	54,000,000
Cheboygan district	13,400,000	24,000,000	1,500,000	38,900,000	44,716,000
Manistee district	62,250,000	95,615,000	42,500,000	200,365,000	171,953,000
Ludington district	4,700,000	30,500,000	22,000,000	57,200,000	32,000,000
Muskegon district	47,810,000	17,500,000	3,175,000	69,485,000	31,386,000
Mackinaw division M. C. R. R.	73,387,000	80,450,000	32,400,000	186,237,000	55,500,000
Pere Marquette R. R. mills	5,500,000	53,250,000	52,500,000	101,250,000	219,300,000
G. R. and I. R. R. mills	27,500,000	35,100,000	72,000,000	134,600,000	79,000,000
Green Bay, Mich., mills	62,150,000	97,140,000	24,978,000	214,277,000	113,349,000
Lake Superior district	333,500,000	68,675,000	71,250,000	503,525,000	289,617,000
Miscellaneous mills	9,500,000	48,970,000	60,430,000	118,900,000	157,500,000
Total state product	717,183,671	699,011,487	438,809,821	1,846,104,979	1,545,231,000