

Cross Ties Purchased by Railways in 1913.

This bulletin is based on reports received from 47 steam railways and 32 electric railways purchasing ties in 1913. The total number of ties purchased was 19,881,714, valued at \$8,470,849, and of this total 3,254,587 ties valued at \$1,827,358 were reported as having been purchased in the U.S. This brings out the fact that Canadian railways imported 16.4% of their ties and paid on an average 13c. a tie more for this than the native article.

Table 1 gives the details of the ties purchased in Canada in 1912 and 1913 by kinds of wood. The decrease in the number of ties purchased in 1913 was 6.7% of the total for 1912. Out of 20 kinds of wood reported the two most important, jackpine and white cedar, were reported in smaller quantities than in 1912, as were seven of the other kinds of wood. The use of Douglas fir increased and formed 12.2% of the total, compared with 10.2% in 1912. The use of this wood has steadily increased since 1908. Four other British Columbia species, Western larch, spruce, hemlock and red cedar, all showed increases from 1912 to 1913. The eastern species of these woods all showed decreases during the same year. Oak ties, of which the greater part are imported, were purchased in increased numbers, but all the other hardwoods, with the exception of elm, showed decreases.

The average price of ties of all classes was practically the same in 1913 as in the preceding year. The two most important woods were purchased at a slightly lower price than in 1912, and of the others five showed increases and eight decreases.

Table 2 shows the details of the ties pur-

widely distributed and abundant trees in Canada, the steam railways reported the purchase of 161,023 imported jackpine ties from the U.S. This wood is used for ties chiefly because of its cheapness and abundance, and the fact that it is fairly strong.

conditions. White cedar ties are obtained in Ontario, Quebec and New Brunswick, and 6.6% of those purchased came from the Lake States.

Western larch or tamarack (*Larix occidentalis*) is a hard strong wood, but one which is not so durable that preservative treatment does not effect a saving in its use. The wood is cut in British Columbia,

	1912				1913			
	Number	Value	Av. Value	Per Cent.	Number	Value	Av. Value	Per Cent.
Total.....	21,308,571	\$ 9,373,869	\$ cts. 0.44	100.0	19,881,714	\$ 8,740,849	\$ cts. 0.43	100.0
Jackpine.....	7,783,034	3,417,238	0.44	36.5	7,773,674	3,103,140	0.40	39.1
White Cedar.....	3,332,105	1,486,456	0.45	15.6	2,451,527	1,090,436	0.44	12.3
Douglas fir.....	2,183,554	661,891	0.30	10.2	2,427,100	801,710	0.33	12.2
Western larch.....	1,196,184	514,359	0.43	5.6	1,225,956	636,631	0.52	6.2
Hemlock.....	1,947,474	743,535	0.38	9.1	1,199,699	455,662	0.38	6.0
Hard pine.....	658,096	434,840	0.66	3.1	1,138,351	621,032	0.55	5.7
Oak.....	933,486	624,174	0.67	4.4	978,554	673,244	0.69	4.9
Tamarack.....	1,803,696	806,049	0.45	8.5	866,231	369,666	0.43	4.4
Western hemlock.....					479,113	148,725	0.31	2.4
Spruce.....	835,121	330,854	0.40	3.9	458,256	151,049	0.33	2.3
Western spruce.....	8,000	4,640	0.58		267,917	70,685		1.3
Chestnut.....	266,082	157,225	0.59	1.2	232,179	126,795	0.55	1.2
Red cedar.....	82,357	29,109	0.35	0.4	115,578	77,328	0.67	0.6
Red pine.....	26,646	12,673	0.48	0.1	114,852	52,112	0.45	0.6
Beech.....	103,583	70,220	0.68	0.5	96,923	60,552	0.62	0.5
Birch.....	37,943	22,605	0.60	0.2	24,736	10,447	0.42	0.1
Maple.....	51,465	39,681	0.77	0.2	16,799	14,320	0.85	0.1
Elm.....	2,868	1,361	0.47	x	13,674	6,421	0.47	0.1
Ash.....					503	216	0.43	x
Cherry.....					31	17	0.55	x
White pine.....	44,408	15,348	0.35	.02				
Balsam fir.....	12,469	1,621	0.13	.01				

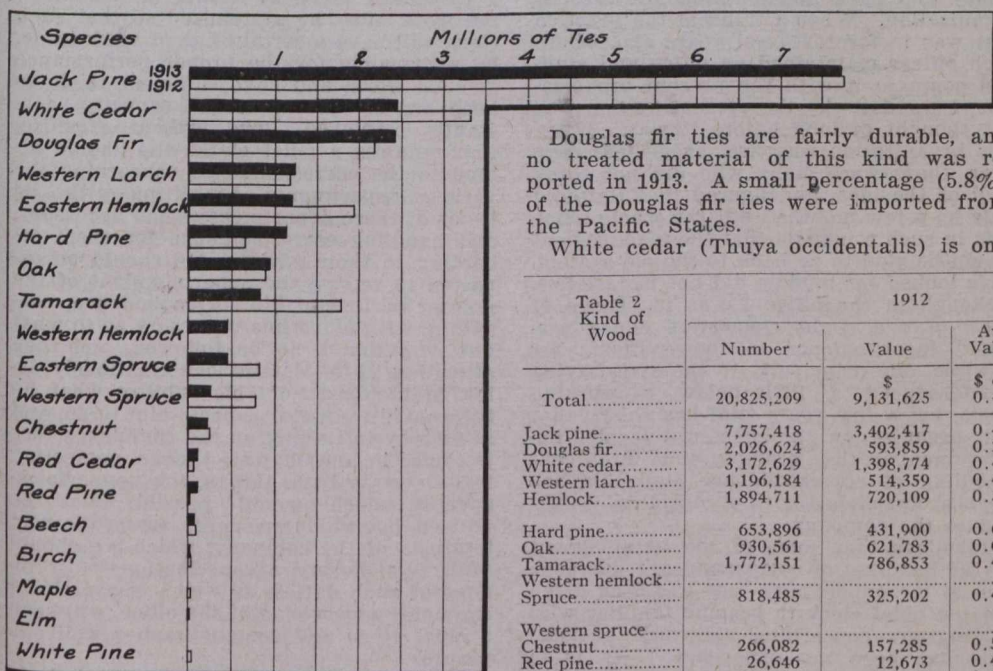
xLess than one-tenth of one per cent.

Untreated jackpine ties decay very rapidly in the roadbed, and the practice of treating them to prevent decay is becoming more prevalent each year. In 1913, 709,227 jackpine ties received preservative treatment before being laid in the steam roadbeds.

and 4.7% of the ties used in Canada in 1913 were imported from Washington and Oregon. Altogether only 3.4% of the larch ties were treated.

Eastern hemlock (*Tsuga Canadensis*) is cut only in the provinces east of Manitoba and is not considered a first class tie material. All the ties of this wood were purchased in Canada and none were given any preservative treatment.

Oak ties were the most expensive on the list, among the more important woods, and were used for switch ties and on lines where the traffic is exceptionally heavy. By far the greatest part of the oak ties were imported, 96.8% coming from the U.S., and were made up of a large number of commercial species. The fact that it pays to



Douglas fir ties are fairly durable, and no treated material of this kind was reported in 1913. A small percentage (5.8%) of the Douglas fir ties were imported from the Pacific States.

White cedar (*Thuja occidentalis*) is one

	1912				1913			
	Number	Value	Av. Value	Per Cent.	Number	Value	Av. Value	Per Cent.
Total.....	20,825,209	\$ 9,131,625	\$ cts. 0.44	100.0	19,490,491	\$ 8,245,166	\$ cts. 0.42	100.0
Jack pine.....	7,757,418	3,402,417	0.44	37.3	7,706,720	3,070,003	0.40	39.5
Douglas fir.....	2,026,624	593,859	0.29	19.7	2,421,118	7,799,271	0.33	12.4
White cedar.....	3,172,629	1,398,774	0.44	15.2	2,305,868	1,013,763	0.44	11.8
Western larch.....	1,196,184	514,359	0.43	5.7	1,223,444	634,742	0.52	6.3
Hemlock.....	1,894,711	720,109	0.38	9.1	1,180,131	448,235	0.38	6.1
Hard pine.....	653,896	431,900	0.66	3.1	1,136,356	619,924	0.55	5.8
Oak.....	930,561	621,783	0.67	4.5	963,794	660,200	0.69	4.9
Tamarack.....	1,772,151	786,853	0.44	8.5	838,999	355,858	0.42	4.3
Western hemlock.....					479,113	148,725	0.31	2.5
Spruce.....	818,485	325,202	0.40	3.9	450,256	148,249	0.33	2.3
Western spruce.....					267,917	70,688	0.26	1.4
Chestnut.....	266,082	157,285	0.59	1.3	232,179	126,795	0.55	1.2
Red pine.....	26,646	12,673	0.48	0.1	114,852	52,112	0.45	0.6
Beech.....	103,583	70,220	0.68	0.5	96,771	60,400	0.62	0.5
Birch.....	37,943	22,605	0.60	0.2	24,736	10,447	0.42	0.1
Red cedar.....	57,357	16,234	0.28	0.3	20,578	6,761	0.33	0.1
Maple.....	51,465	39,681	0.77	0.2	16,799	14,320	0.85	0.1
Elm.....	2,778	1,195	0.43		10,326	4,440	0.85	0.1
Ash.....					503	216	0.43	x
Cherry.....					31	17	0.55	x
White pine.....	44,227	14,965	0.34	0.2				
Balsam fir.....	12,469	1,621	0.13	0.1				

xLess than one-tenth of one per cent.

of the most durable woods in Canada and has always been a favorite tie material, although its softness makes frequent renewals necessary where traffic is heavy. Most of the cedar ties used wear out before they decay, and therefore preservative treatment is not necessary under prevalent

apply preservative treatment to a hard, strong and even durable wood like oak is demonstrated by the fact that the steam railways in 1913 purchased 525,623 treated oak ties, this number forming 54.3% of the total.

Hard pine from the southern Atlantic and

chased by the 47 steam railways in 1912 and 1913 by kinds of wood. A total of 19,490,491 ties, or 98.0% of all those purchased in Canada, were used by steam railways. This total is a decrease of 6.4% from the total for 1912. The ties imported for use by this class of companies amounted to 3,235,022, valued at \$1,813,256, and formed 16.6% of the total.

The jackpine ties included in this table were made up of two separate species, eastern jackpine (*Pinus Banksiana*), which is cut in every province east of British Columbia, and lodgepole pine, which is cut only in British Columbia and western Alberta. Although this is one of the most