

Gulf States forms an increasing proportion of the tie material imported into Canada each year. This wood does not grow in

rule, the more durable native woods were purchased by these companies, and the treated ties formed less than one per cent.

Table 3 Kind of Wood	1912				1913			
	Number	Value	Av. Value	Per Cent.	Number	Value	Av. Value	Per Cent.
Total.....	483,362	\$ 242,195	\$ cts. 0.50	100.0	391,223	\$ 225,086	\$ cts. 0.58	100.0
White cedar.....	159,476	87,681	0.55	33.0	145,659	76,673	0.63	37.2
Red cedar.....	25,000	12,875	0.51	5.2	95,000	70,567	0.74	24.3
Jack pine.....	25,616	14,821	0.58	5.3	66,954	33,137	0.49	17.1
Tamarack.....	31,545	19,196	0.61	6.5	27,232	13,808	0.51	7.0
Hemlock.....	52,763	23,426	0.44	10.9	19,563	7,427	0.38	5.0
Oak.....	2,925	2,391	0.82	0.6	14,760	13,044	0.88	3.8
Spruce.....	24,636	10,292	0.42	5.1	8,000	2,800	0.35	2.0
Douglas fir.....	156,930	68,032	0.43	32.5	5,982	2,439	0.41	1.5
Elm.....	90	157	1.74	.....	3,348	1,981	0.59	0.9
Western larch.....	.....	.....	.....	.....	2,512	1,889	0.75	0.6
Hard pine.....	4,200	2,940	0.70	0.9	1,995	1,108	0.55	0.5
Beech.....	.....	.....	.....	.....	152	152	1.00	.....
Maple.....	.....	.....	.....	.....	61	61	1.00	.....
White pine.....	181	384	2.12	.....	.....	.....	.....	.....

Canada and is the product of at least four different species of pines, the most valuable of which is long leaf pine (*Pinus palustris*). The wood of the hard pines, when used for ties, usually decays before it fails through mechanical wear, and therefore it repays the cost of a preservative treatment that will postpone this decay. Of the hard pine ties used in Canada by the steam railways in 1913, 17.5% were treated.

Western spruce is made up of two species, which are confined for the most part to British Columbia. Englemann spruce (*Picea Engelmanni*) is found on the Rocky Mountains and in the eastern part of British Columbia, and Sitka spruce (*Picea Sitchensis*) is cut on the Pacific coast. All the western spruce ties were native material, and on account of their rapid rate of decay in the ground 34% of those purchased were given preservative treatment.

Eastern tamarack (*Larix laricina*) is very similar to the western species and has always been a favorite tie material on account of its spike holding qualities. About half the tamarack ties were imported and none were reported to have been treated.

Western hemlock (*Tsuga heterophylla*) is usually considered to be a much better tie material than the eastern species, but in British Columbia, where this tree grows, it has so many rivals among the good tie timbers that it is not used to a very great extent. All the western hemlock ties were purchased in British Columbia and none were given preservative treatment.

Eastern spruce in Canada is made up of three different species that grow east of the Rocky Mountains. All the spruce ties were of native material and none were treated.

Chestnut (*Castanea dentata*) is one of the most durable woods of America, although not to be classed among the hard, heavy tie materials. Practically all the chestnut ties were imported from the eastern States and none were treated.

Of the other hardwoods purchased, such as beech, birch and maple, the greater part of the ties were treated before being laid. Altogether about 12% of the ties purchased by steam railways in 1913 received some sort of treatment to prevent decay.

Table 3 gives details of the ties purchased by 32 electric railways in Canada in 1912 and 1913, by kinds of wood. While the electric railways in Canada in 1913 purchased only 2% of the ties, they paid the highest average price for their material. The total for 1913 was a decrease of 19.1% from 1912. The two cedar species in this class formed together three-fifths of the total, and jackpine, which was the most important wood used by the steam railways, was only of secondary importance. As a general

Of the oak ties reported, 9.3% were treated, as were all the imported beech and maple ties. The only western species reported were red cedar, Douglas fir and western larch. The electric railways paid on an average 16c. a tie more than the steam railways, an increase of 8c. from 1912, increasing with the cedars and with oak. All the other woods showed decreases in average cost.

About 10% of the cross ties purchased by both classes of railways were given preservative treatment to retard decay. The practice is a fairly recent one, as is seen by the fact that in 1910 practically no ties were treated at all, and that the percentage of treated material has increased steadily since that time. The treatment under present market conditions is most profitable when applied to the harder, stronger woods, that if used untreated would decay before the end of their mechanical life.

This bulletin was prepared by the Interior Department's Forestry Branch, R. H. Campbell, Director of Forestry.

## Unit Office Organization on Western Lines, Canadian Pacific Railway.

By C. C. Connolly, Chief Clerk, Superintendent's Office, Canadian Pacific Railway, Cranbrook, B.C.

This subject is an important one, as the efficient handling of an office depends primarily on the organization. The method in force for handling the clerical work on a superintendent's district several years ago, and that in use now, is familiar to all in the operating department, and I question if there are any who do not appreciate the many advantages and increased efficiency that have resulted from the present organization. When I think of the practice that was in force several years ago, where each officer maintained an office and staff, and compare it with the present organization, I wonder why the present system was not thought of long before it was. When this organization was first suggested, however, there were many who did not think well of the idea, and figured that it would only be a few months until the whole office was in such a muddle that the management would be glad to go back to the old system. This looked for muddle did not materialize, although in the office I was in charge of there was a slight congestion and consequent inconvenience to some officers for a while, due principally to the staff having been reduced a little below a working basis, but a few years trial has shown that this organization has effected a decided improvement in the prompt and intelligent handling of correspondence, and this has been accomplished with a considerable saving to the company.

I believe that some of the improvement in the handling of correspondence has been due to the opportunity that has been given for the chief clerk to become familiar with all matters concerning his work, at least this has been my experience. He is in constant intercourse with all the officers, which was not the case previously, and in that way he is in touch with everything of importance that is going on in the district. A great deal of duplication of correspondence has been eliminated, and it has also made unnecessary the interchange of correspondence between district officers and the superintendent's office. I consider it still necessary for the superintendent to write certain letters or circulars to officers which contain instructions or methods to be followed concerning the work they are in charge of, which enables them to keep a small file of their own containing instructions and rulings in connection with their particular work, and which is always avail-

able to them for reference. This is preferable to handling a file from one officer to another, and avoids the possibility of important files becoming mishandled or mislaid. This simply means handing them a copy of the instructions, so each may have it, and does not in my opinion constitute in the slightest degree a deviation from the principles of this organization.

To obtain the best results in the office, the work must be systemized so that each clerk will have a certain line of work to do, be responsible for the proper performance of such work, and have sufficient to do to keep one of the average capacity constantly employed. The present organization requires a chief clerk who should attend to the correspondence concerning the various departments, consulting with the heads of these departments when necessary, and handling correspondence for them according to their advice. He should be expected to relieve the superintendent of the greater portion of his correspondence, consulting with him when necessary as to what line of action is to be followed, and then attending to the details, conscientiously doing to the best of his ability what he believes his superior expects him to do, and in no way infringing on the confidence that is placed in him; by this I mean, neglecting to do certain little things, the nonperformance of which would possibly not be noticed, but which are necessary in the best interests of the company, which we should all have at heart. A conscientious performance of such duties, as well as exercising a general supervision of the office, will keep a chief clerk and a stenographer well employed.

There should be an assistant chief clerk, who will first go through the mail to see that it is properly recorded under correct file numbers, and correct files attached, attend to tracing, and various weekly and monthly reports that it is necessary to submit to the general office, and also handle any correspondence that is assigned to him by the chief clerk. There is usually sufficient work attached to this to keep him and a stenographer constantly occupied.

Then there is a register clerk required who is to stamp and record all inward mail, attach files, and also record all outward correspondence. This is a very important post, and it is not always that we are able to fill it satisfactorily, and it is at