

Financial inducements such as these should commend to the leading Canadian railways the preservative treatment of ties. No doubt the general adoption of the policy would be hastened if the government undertook to cooperate with the railways and demonstrate that the preservative treatment of timber is true economy from all standpoints.

Preservative treatment would encourage the use for ties of timber now wasted. It would give value to timber now considered almost or quite valueless. There are comparatively large areas of fire-killed timber standing in different regions in Canada. This timber is well seasoned, light and strong, and may be cheaply handled. It is checked and cannot be used for lumber. It lacks only durability to make it very suitable for cross-ties. It is so well seasoned that preservative treatment is as a rule easy and efficient. The adoption of preservative treatment would prevent the now common waste of large quantities of this material and would turn it into first class ties. It is now believed in Canada that unless fire-killed timber is taken out within one, two or three years after the fire it is lost. So long as it is sound it will make good ties if it is given a preservative treatment. Preserved ties made of Engelmann spruce and lodgepole pine killed 50 years ago are giving satisfactory service in the Western United States.

The introduction of the chemical preservation of wood would make available, for use as cross-ties, woods which cannot be used now because of their lack of durability. Such species when thoroughly treated resist decay as long as do the most durable Canadian woods. Species which are of small value now, but which would give adequate service as tie timbers, if chemically treated, are poplar, cottonwood, birch, red maple and beech. Poplar and birch especially are widely distributed throughout Canada, grow rapidly and reproduce well, commonly coming up densely over large areas after fires and lumbering operations. These timbers, among the fastest to grow and the readiest to reproduce in Canada, have a very poor market at present. To prove them available for tie timbers would be doubly beneficial; it would solve the problem of marketing them and provide for the use of the railways, to replace the more naturally valuable species, already disappearing, a large supply of timber hitherto unappreciated.

Every means should be taken to encourage the use of inferior species of timber for cross-ties. Cedar, tamarack, Douglas fir and oak are woods of such high technical value that they are to some extent wasted when used for cross-ties. Cedar, tamarack, and oak are becoming scarce in Canada and being of slow growth cannot be quickly replaced; the use of these timbers, together with that of Douglas fir, should be restricted to those situations in which they have no substitutes.

The wisest use of the forests of Canada will demand that the chief tie timbers of the future will be the cheap, fast-growing species, together with what dead timber can be utilized. These are the two with which, of the timbers now used, preservative treatment effects the greatest economies, jack pine and spruce, and the others, poplar and birch, which can be used only after preservative treatment.