

was seeded with other varieties of trees, and when a pine seed year occurred the seed could not get to the soil; and there was therefore no secondary forest of pine; hardly a secondary pine tree in the whole area—examined—with one exception. One of the large pines had been struck with lightning when the second forest was about 40 or 50 years old; this fire had burnt over about one or two acres, and as this had occurred on a pine seed year the result was a dense growth of pine covering the burnt over area. Other-

wise, in all that section, there was no evidence that a secondary growth of pine had been produced, notwithstanding the fact that thousands of large pine trees had been showering their seed on the ground for over one hundred years.

W. A. PRESTON.

Our great forests are like an open book to the student, and provide a most fascinating and instructive study.

W.A.P.



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## SHADE TREE REPAIRS.

(Concluded from page 424.)

comparatively dry. It is not permanent, however, and if used on a surface slow to cover, should be applied yearly until the wound heals.

An application of thick coal-tar makes a more satisfactory covering than paint, and sometimes one application is sufficient. It must be kept under observation, however, and if there is any indication of cracking or peeling, a fresh coat should be added. If desired, the disinfecting and water-proofing may be done in one operation by first mixing the creosote and coal-tar in the proportions of one-fourth creosote to three-fourths tar.

Asphalt has in recent years come into considerable use as a protective covering since it is less likely to crack and peel than coal-tar. To be used the asphalt must be mixed with some solvent, such as creosote, gasoline or other mineral oil. The asphalt is first melted over a fire and then removed before stirring in the oil to avoid the chance of it catching fire. Sufficient of the solvent must be used so that the mixture will be somewhat thicker than paint when cool. It is best to prepare a small trial mixture and allow it to cool to air temperature before making up a large quantity. Asphalt without solvent is sometimes used, but it is necessary to apply it hot. It should therefore be used only where the heat will not injure the living tissue of the tree, as on the interior surface of large cavities. Apply hot asphalt with a cloth swab.

Grafting-wax in liquid form is good for coating small surfaces but it is too expensive for use on large wounds. It may be made by melting ordinary grafting-wax and stirring in half the quantity by weight of alcohol. Or it may be made by melting one pound of white resin with one ounce of beef tallow and after removing from the fire, adding eight ounces of alcohol. It should be kept corked.

## FROM THE GRAIN GROWERS !

Here is a typical opinion of the Canadian Forestry Association. It comes from the United Grain Growers, Winnipeg.

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