

One of the most important methods of preventing serious insect injuries is found in the provision of the best possible conditions for tree development. Proper surgical treatment to remove rot infections and fill the resulting cavities, and to support the weakened parts with cement, iron bolts and chains, so as to prevent breakage, as well as the provision of abundant water in dry seasons, and general precautions against injurious insects, help the trees to a vigorous condition that withstands more successfully the severe periodical insect outbreaks.

The life-history of the White-marked Tussock discloses two periods, the egg and the larval stages, during which control measures may be successfully applied. The eggs may be destroyed, and the caterpillars may be killed by poison.

THE DESTRUCTION OF EGG-MASSSES.

The more effective and economical method for application in cities and towns is usually considered to be the destruction of egg-masses during the dormant season, combined with banding the tree trunks. Fortunately the white masses are so conspicuous that they are at least easily observed. The species is present in the egg-stage for practically ten months of the year, in this climate, and a long period is thus offered for the removal of the egg-masses.

If the eggs are entirely removed from a group of trees during the fall, winter, and spring, and the trunks are properly banded to prevent reinfestation by wandering caterpillars, the foliage will be completely protected from tussock caterpillars for the season.

The egg-masses are either killed by painting them with creosote, or removed by means of wire brushes or scrapers.

Painting with Creosote.—In the control of the Gipsy Moth, the egg-masses are killed by painting them with creosote by means of a brush. This method has also been employed successfully against the Tussock Moth egg-masses, and in some cities has replaced entirely the use of the scraper and wire brush, being considered more effective and very much cheaper. Rubber-set paint brushes are used, attached to light pine poles, about 16 feet long and 1½ inches square. The creosote is darkened with lampblack so that the painted egg-masses can be more easily distinguished.

The Egg-mass Remover.—A special wire brush, 5 inches long and 1 inch wide, has proven most efficient in removing the egg-masses. A narrow hoe-blade, 6 inches long and 2 inches wide, has also been used effectively. The brush or hoe blade is attached to a long handle; two lengths may be employed, one of 10 feet and the other of 20 feet.

The work of removing or destroying the egg-masses is done usually by gangs of three men each, equipped with a 40-foot extension ladder, and either egg-mass removers and canvas sheets or creosote outfits, one man directing the work from the ground.

When the egg-masses are removed by brush or scraper, some of them are broken and the eggs are scattered about the ground. Many of these eggs would probably survive and reinfest the trees; and it is therefore advisable to spread large canvas sheets on the ground beneath the trees before the operation so that the eggs may be easily collected, or else to have all the trees properly banded before the hatching time of the eggs in the following season.

In collecting the egg-masses, care should be taken not to remove the cocoons which do not bear the eggs. These cocoons contain useful parasites, and they should be preserved; they are easily distinguished from the true egg-masses by their darker colour. The egg-masses themselves will probably contain a certain number of minute egg parasites, which would be destroyed by burning the eggs. In order to utilize the services of these beneficial insects, in seasons when egg-parasites are abundant, the egg-masses may be stored until spring, and then distributed in small, specially protected wooden boxes near the infested trees; the boxes