

such trees as the Manitoba maple, and if not destroyed in time may completely defoliate them. The adult female moths are wingless, but the males are winged. The insect winters over as eggs on the affected trees. Spraying the trees on the first appearance of injury with arsenical sprays is an effective way of holding them in check, while banding the trees early in the fall with bands of paper covered with pine tar or some sticky material is also recommended.

Tent Caterpillars.

Other injurious insects affecting our trees are the Tent Caterpillars (*Glusocampa disstrata*). These insects during their larval development live in small tents on the branches of trees, giving the trees an unsightly appearance. From these tents the larvae emerge and feed on the tender leaves and buds. Collecting and destroying tents or the egg masses in which condition the insect passes the winter or spraying the leaves with arsenical sprays are effective means of destroying the insect.



Canker Worm

The male winged Canker Worm is shown in figure A; the wingless female (d) the left hand of picture; the larvae at the top of the picture (c).

Western Willow Leaf Beetle.

During recent years more or less injury has been caused to the willows and poplars by a small, brownish beetle which feeds on the leaves of these trees and frequently appears in such large numbers as completely to defoliate them and leave them brown and bare. This small beetle is the Western Willow Leaf Beetle (*Galerucella decora*). On account of the suddenness of their appearance and the injury caused by them, effective control measures should be employed as soon as they appear.

These beetles are tissue eaters, and the arsenical sprays, such as Paris Green and Arsenate of Lead, may be employed against them.

Plant Lice on Maples.

Every year more or less injury is caused to the Manitoba Maple by the Negundo Plant Louse (*Chaitophorus Negundinus*), a small greenish plant louse which collects in large numbers on the young growths and leaves of the Box Elder or Manitoba Maple. They are sucking insects and feed on the juices of the tender parts. As they draw their food from beneath the surface, they are not destroyed by any application of poisonous sprays applied to the surface of the tissues. The most effective means of control is the application of contact solutions, such as Nicotine Sulphate, known as "Black Leaf 40," kerosene emulsion or the tobacco solutions or soap washes.

Larch Saw Fly.

Of insects affecting forest trees, and particularly coniferous forest trees, none are more widely distributed or destructive than