

The twigs and branches readily break at injured parts. The eggs are laid in the slits in July and August, and hatch the following June.

Treatment. Prune out affected branches and twigs in fall and spring.

4. OYSTER-SHELL SCALE (*Mytilaspis pomorum*). This brown scale insect infests the bark. It has a shape like a minute oyster shell. It passes the winter as an egg under the old scale. The egg hatches about the first of June, and there is but one brood each year.

Treatment. Spray trees with white wash, lime-sulphur wash, or whale oil soap solution in winter; spray with kerosene emulsion solution when the eggs hatch and the young are crawling.

5. SAN JOSE SCALE (*Aspidiotus perniciosus*). This insect is quite minute, is circular with a central nipple. It winters as a half grown scale and matures about end of June. There are three or four broods each season. It injures the tree by sucking the sap. If the presence of this insect is suspected, a report should be made to the Department of Agriculture, Toronto.

Treatment. Spray in spring before buds open with lime-sulphur wash.

III. ATTACKING THE BUDS AND LEAVES.

1. THE BUD MOTH (*Tmetocera ocellana*). The Bud Moth is a small, grayish insect which lays her eggs in July on the leaves. The young caterpillars feed on the under surface of the leaves. They pass the winter in a half grown state in small scales near the buds or other protected places. In spring they attack the swelling buds, often riddling them, and later form silken nests about the young leaves. The caterpillar is almost naked, brown with black head, and about $\frac{3}{4}$ of an inch long when full grown.

Treatment. Spray thoroughly with arsenic solutions just as the buds open.

2. FALL CANKER-WORM (*Anisopteryx pometaria*) and the SPRING CANKER-WORM (*Paleacrita vernata*). The females of these moths are wingless, the former depositing her eggs on the twigs in the fall, the latter in the spring. The caterpillars of both species are loopers, which attain a length of an inch. They feed on the leaves. When full grown they descend to the ground and change to pupæ in earthen cells. The moth of the Fall Canker-Worm appears in the fall, while that of the Spring Canker-Worm appears in the spring.

Treatments. Band the trunks of the trees in early fall with burlap or cotton to prevent the wingless females from ascending to lay their eggs. Spray with arsenic solutions, usually just before or after blossoming, when the caterpillars are small.

3. THE TENT CATERPILLAR (*Clisiocampa Americana*). The web tents of these insects are often conspicuous in May, as the leaves appear. The caterpillar is hairy, and has a white-stripe down the back. The oval co-