

## Orchard Aphids and Their Control\*

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**I**N taking into consideration the most economical and effective method to control any insect, we cannot unfortunately, confine our attention to that pest alone, for many other factors intervene to influence our results. It frequently happens that the time to spray for some insect pest coincides with the time to spray for some fungous disease, so that it is often possible by combining various sprays, to make one operation take the place of two or even of three. This is true of the aphids in that the most important aphid sprays coincide with important sprays for other insect pests and fungus diseases, and it is important to remember at this point in considering how we can best reduce the cost of keeping the orchard free from pests. We must also remember that proper pruning, careful thinning, adequate cultivation, the judicious use of cover crops and fertilizers with thorough and timely spraying are all factors in the production of better fruit, and none must be neglected if our work is to prove profitable. In taking up this subject, I realize that you are already thoroughly acquainted with the appearance and life history of the different orchard aphids, and that you are only interested in hearing of some way to kill them. I will, therefore, only deal very briefly with the former side of the subject, confining my

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remarks very largely to control methods.

Three species of aphids are commonly found in orchards: First, Green Apple Aphid; second, Rosy Apple Aphid; third, Woolly Apple Aphid.

The first is by far the most common species in Nova Scotia. All of you are familiar with the small, oval black shiny eggs of this insect, found upon the twigs of the last year's growth during fall and winter. These eggs begin to hatch early in spring, and by the time the leaf buds are showing green most of the aphids have emerged. The time of hatching usually extends over a period of several weeks. The newly hatched aphids are all wingless females that give birth to young without the intervention of the males. A small percentage of the second generation give rise to winged females, which fly to other trees and establish colonies there. The aphids breed continuously throughout the season, some being winged and others, again, wingless. Toward fall true males and females are produced that pair in the ordinary way; the true females subsequently depositing their eggs upon the twigs.

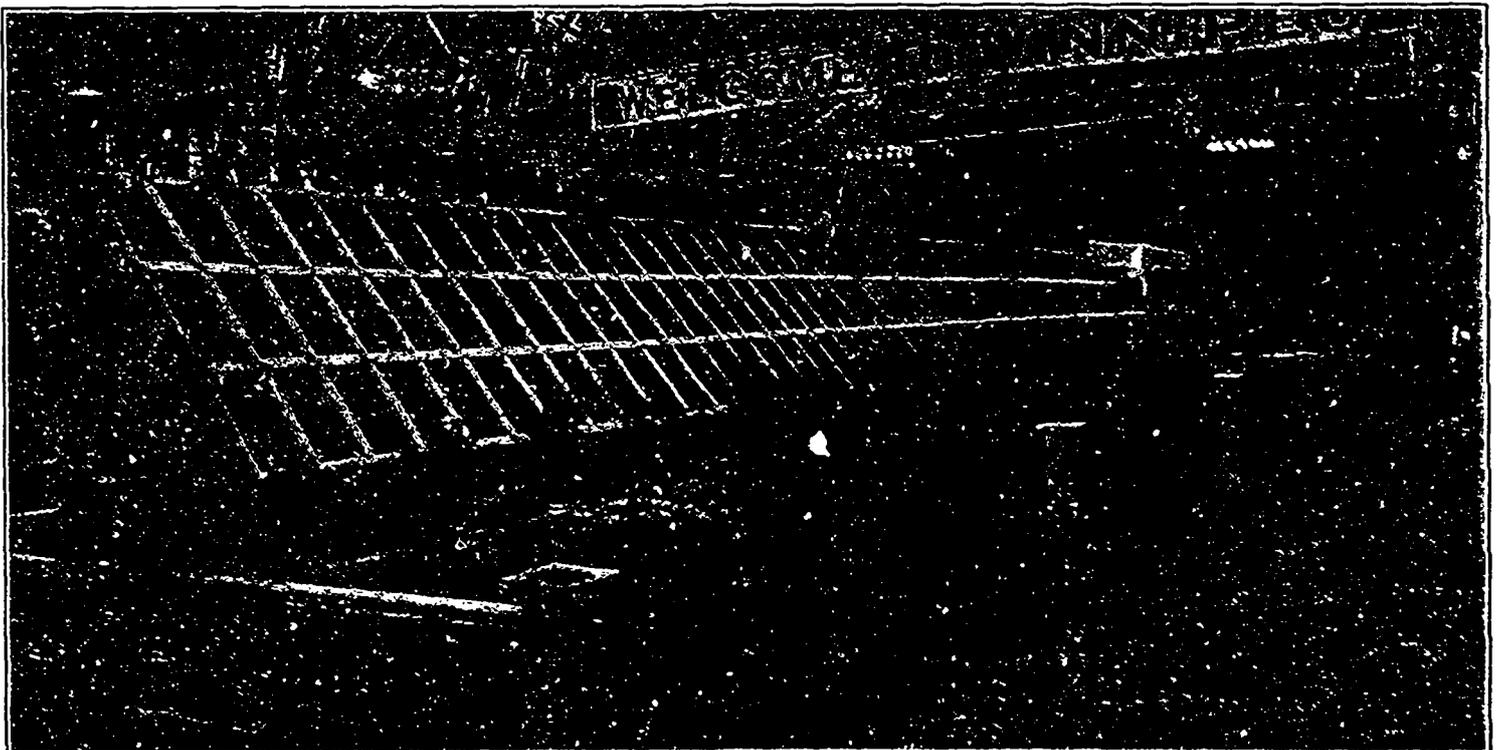
The life-history of the Rosy Aphid is similar to that of the green apple aphid. The eggs are laid on the apple, though not nearly so abundantly as in the case of the previous species. The newly hatched young are dark green in color, but later reddish and brownish forms are produced. During the summer th-

aphids migrate to some unknown food plant, returning in the fall to deposit their eggs.

The Woolly Apple aphid is in some countries the worst pest of all, owing largely to the fact that it may attack both roots and tops. It is very different in its habits from the two preceding species, for whereas they are leaf eaters, this species feeds for the most part upon the tender bark of roots or stems. On the roots they form gall-like swellings, and may not be detected until the tree is seriously injured. The chief source of the lice found upon the trees in spring is those that migrate from the roots and those which have remained concealed upon the trunk of the tree in cracks and crevices of the bark. In spring and early summer they will be found abundant around wounds in the bark or upon stumps of limbs that have been cut back, or in similar locations. Later in the season they are found farther out on the branches, the small limbs, twigs, or leaves being often completely encrusted with the insects. The aphids have an irritating or poisonous effect upon the bark, their work causing open cankers upon the twigs. Small galls also result in some cases.

Probably the most valuable aphidicide that has been developed in recent years is a preparation of Nicotine Sulphate, called Black Leaf 40, manufactured by the Kentucky Tobacco Product Company of Louisville, Ky.

I do not wish to enter into the question of spraying for the apple scab, but if



The Exhibit of Ontario Fruit which carried off the First and Second Prizes in the class for Five Boxes, at the Canada Land and Apple Show, held in Winnipeg last October. This was the only Open Competition for Apples. British Columbia was Third