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ONTARIO AGRICULTURAL COLLEGE
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BULLETIN LXII

BARK-LOUSE AND PEAR-TREE SLUG

BY J HOYES PANTON PROFESSOR OF NATURAL HISTORY AND GEOLOGY

PUBLISHED BY THE DEPARTMENT OF AGRICULTURE

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BULLETIN LXII.

OYSTER-SHELL BARK-LOUSE AND THE PEAR-TREE SLUG.

Several inquiries have come to the College in reference to the nature of the above insects and the best means to use in order to get rid of them.

This bulletin has been prepared with the object that it may prove of practical importance not only to those who have asked information upon the subject, but also to many others in the province whose orchards are infested by these pests.

OYSTER-SHELL BARK-LOUSE (*Mytilaspis pomorum*). This minute insect, found upon the bark of the small twigs of the apple tree, is readily identified by its oyster-shell shaped scale, about one-sixth of an inch in length. This scale is of a brown color, and thus disguised by the bark is not seen unless by close observation.

Oyster-shell Bark-louse. 1. Insect. 2. Egg. 3. Forming scale. 4 and 5. Further development. 6. Scale. 7. Scales on bark of twig. || on right of first six cuts denotes natural size.

Usually a good many are clustered together, and their shape is so marked that we soon recognise them. Though largely found upon the twigs, they are also found upon branches and limbs of considerable size. If the scales be raised up and examined beneath, any time in the fall or winter, numbers of very small white particles will be observed, which on close examination will prove to be eggs. Here beneath the peculiarly oyster-shell shaped scales they remain until early in the summer. As soon as the weather is favorable, especi-

ally about the end of May or the beginning of June, the tiny eggs hatch, and out from beneath the scale issue the bark-lice, which are exceedingly small. They scatter themselves over the twigs of the tree, seeking suitable spots for further development. Having found such, the minute insects fix themselves upon the tender growing bark. This they pierce with the beak-like structures connected with their mouths, and by means of which they are able to suck the sap from the twig or branch upon which they are located. Once fastened to the twig, they remain attached and do not move about; consequently this continual drain upon the tree's sap, especially when they are numerous, soon affects its vitality. It is not an uncommon thing to see a branch almost completely covered with the scales. Permanently fixed, they continue feeding from the sap of the tree until toward the end of August or September; by this time they have reached full size and gradually form the scale by means of waxlike threads that issue from their bodies, and which eventually make the scale. Under these the female deposits her eggs, and by the time her work is completed she has shrivelled up to a mere speck and her existence is at an end. At this stage an examination of the scale beneath would show a mass of tiny eggs, with little or no trace of the insect that laid them. The scales we see are almost invariably those formed by the females; those of the male being seldom seen, and then most frequently upon the leaves. They are much smaller in size and somewhat different in shape. The peculiar nature of bark-lice prevents to a great extent their spreading from tree to tree, and in many cases no doubt they have been upon the trees when first planted, but have not been observed till, it may be, years afterwards, when they have multiplied so as to cover the branches and be readily seen. They may be carried to some extent from tree to tree by birds, and also by other insects at a time when they are in search of proper places for location. Such is the life-history of this bark-louse, which seems to be rapidly spreading over the country.

Remedies. We shall now suggest some remedies for its destruction:

1. Examine infested trees carefully during May and the beginning of June, and as soon as the tiny lice are seen crawling about spray the tree with the following kerosene emulsion: one-half pound of hard soap in one gallon of boiling water; to this add two gallons of coal oil and thoroughly mix. This on cooling, if well mixed, will form a jelly-like substance. When about to use, add nine parts cold water and spray upon the trees. Thorough mixing can be effected by forcing the mixture through a force pump with a small nozzle until the whole forms a creamy mass.
2. In the winter and spring scrape off the trunk and larger branches as many of the scales as possible, and then thoroughly scrub with a scrubbing-brush or broom dipped in the following solution: one quart

of soft soap water. To

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of soft soap, or one-quarter pound hard soap, in two quarts of boiling water. To seven parts of this add one part of crude carbolic acid.

3. Soft soap made about as thick as paint by adding a strong solution of washing soda in water. This applied to the trunk and limbs improves the vigor of the tree as well as gets rid of the bark lice.

PEAR-TREE SLUG (*Selandria cerasi*). The eggs of this insect are usually deposited early in June in the leaf, which appears marked with semicircular incisions. These have been made by a peculiar structure which the female has for the purpose. The eggs soon hatch

Pear-tree slug. 1. Insect. 2. Slugs feeding on leaf. 3. Slug, enlarged size.

and the young slug develops until it reaches about one-half an inch in length. It presents an unattractive appearance, being somewhat blackish or bottle green in color, covered with an olive-colored slime. The front part of the body is swollen, and the slug resembles a tadpole in appearance. It has a disagreeable odor. During the slug period of its existence it feeds upon the foliage of the pear, cherry and plum, and in some places becomes a serious trouble. The larval condition being completed, it leaves the tree and spends a portion of its existence in the ground, from which in due time it emerges the perfect insect—a fly of a glossy black color with four transparent wings and dull yellow legs. The female is about one-fourth of an inch long and the male somewhat smaller. The first appearance of the slug is near the end of May until the middle of June, but another brood may appear near the end of July or August. The cherry and pear trees should be examined for these troublesome insects about the middle of June, and again early in August. They are very voracious, and can soon destroy the foliage of a tree. When attacked, the leaves wither and look as if scorched by fire.

Remedies. The following remedies are suggested :

1. Syringe with hellebore mixed with water in the proportion of an ounce to two gallons.
2. Syringe with Paris green, one teaspoonful to two gallons water.
3. Dust upon the foliage fresh air-slaked lime.