

## NATURE STUDY OF ANIMALS.

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## Cankerworms.

The Fall Cankerworm should be studied during November. This species and its cousin, the Spring Cankerworm, annually cause much destruction to the orchards of Eastern Canada. The Fall Cankerworm especially, is a great pest in the orchards of Nova Scotia.

On mild days and evenings, after the frosty nights of late October and early November, slender, delicate, silky winged moths make their appearance. The fore-wings are of a glossy gray color, and crossed by two rather irregular whitish bands. The hind-wings are grayish-brown with a faint blackish dot near the centre, and a more or less whitish band across them. These are the male moths of the Fall Cankerworm; the female is without wings, is slow moving, and rather spider-like in appearance. The body is of a shining ash color above and a gray beneath, and from three-tenths to four-tenths of an inch long.

She may be readily found by visiting the orchard with a lantern on some mild November night, when the males are plentiful. She is creeping up the trunk of the tree on her way to the twigs to deposit her eggs, ready for the spring hatching.

The larva appear in spring, about the time the tender leaves are expanding, and are often numerous enough to defoliate the tree. When full grown they measure about an inch in length; they vary in color from greenish-yellow to dusky or even dark-brown. The posterior part of the body is provided with three pairs of legs (pro-legs). The larva of the Spring Cankerworm is much like this, but it has only two pairs of pro-legs. Both these caterpillars are called loopers or measuring worms, because they alternately loop and extend their bodies when in motion.

When not eating they are often found with the fore-part of the body raised at an angle of about forty-five degrees, when they resemble a twig so closely in form and color that they usually escape detection—a good example of protective coloration and protective resemblance. When full-grown they descend to the ground, letting themselves down by a silken thread. They burrow in the soil and there pass the pupa state.

The moth of the Spring Cankerworm usually appears in the spring, but are occasionally found

with the Fall specimens. They are somewhat lighter in color, and in both sexes the adult of this species is distinguished by the presence of two transverse rows of stiff reddish spines, pointing backwards, on each of the first seven abdominal segments.

See Experimental Farms Reports for 1910. This publication can be obtained free upon application to the Minister of Agriculture, Ottawa. Every school should obtain and keep these reports and similar literature on file.

"Tangle-foot" is used to destroy these insects. A good substitute can be made by dissolving resin by heating and mixing it with an equal part of boiling castor oil. Each tree should be banded about four feet above the ground, or below the lower branches. Apply the mixture with a brush, and keep the bands fresh by passing a coarse wooden comb around it, and also preserve its continuity around the tree. The female moths in attempting to ascend are caught in the band.

There are other ways of protecting our orchards, —winter birds, especially the Chickadees, are fond of insect's eggs, and one writer says, he has demonstrated that an orchard can be practically rid of Cankerworms by protecting these birds and attracting them with the winter food. I have found beef-suet especially attractive food for winter birds. During the winter, have your pupils suspend pieces of suet in fruit-trees, and keep records of the visitors, and watch them carefully. Why do the birds (Chickadees) so carefully inspect the limbs of the trees? Dr. Hodge says,—“The English Sparrow was imported largely to destroy Cankerworms, but they have greatly increased where the sparrow has become most numerous.” Why is this?

## The Preparation of Animals for Winter.

How is the horse preparing for winter? When is the fur of animals thickest, and best for market? What common animals begin to change the color of their coats at this season? What color do they assume, and why? What preparation have the Song Sparrow, Junco and Bobolink made for winter? Name other birds that have made a like preparation.

Keep lists of these in your school, and have your pupils watch for their reappearance in the spring. Perhaps some of your pupils can tell you of the preparation made by the Thistle birds or