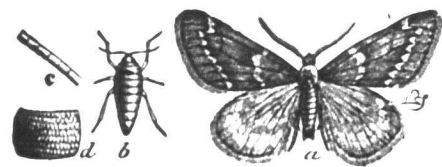


FERNDALE SCHOOL.

No. XIII.—THE CANKER WORMS.

1. *Anisopteryx pometaria*, Harris, (FALL CANKER WORM).
2. *Anisopteryx vernata*, (Peck), (SPRING CANKER WORM).

TEACHER. Here is another of the great enemies of our apple trees. When was this delicate, brownish grey, nearly transparent winged, moth captured?

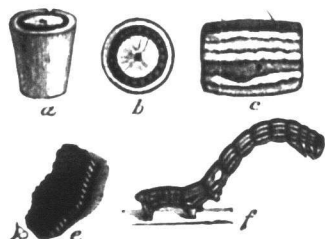


FALL CANKER-WORM (Imago).

a. Moth (Male); b. Moth (Female); c. Portion of Antenna Magnified; d. Segment of Body Magnified.

JACK. On a fine day last November. After the first frosts are over in the fall, they come out of their cocoons in the ground in great numbers. The female ones, without wings, looking like a kind of grey bug or spider less than half an inch long, were caught climbing up the apple trees and laying pretty patches of small eggs on some of the twigs.

TEACHER. Very good. Here we have one of these patches figured at e, and the separate eggs magnified at a (side view) and b (top view). When do these eggs become hatched?



FALL CANKER-WORM, (Eggs and larva).

S. In May just when the buds of the trees break out into leaf, and the larvæ keep eating at the leaves until they grow about an inch long before the end of June.

T. There is a drawing of one at f with one of its segments magnified at c. What habits have you noticed?

S. They sometimes stand out straight in the air.

ANOTHER S. There are no feet on the middle of their bodies, and they loop when crawling.

OTHER S. They call them loopers . . . measuring worms . . . yardstick caterpillars, because they crawl on as if they were measuring. If you shake the tree they fall off and remain hanging on fine silk threads like spiders' webs.

T. Correct. And about the end of June when full grown they reach the earth, go down into it from two to six inches, weave a buff-colored cocoon of silk and change into chrysalids. The pupa comes out of this after the first autumn frosts, as the perfect moth, male or female, as we have seen. To what order of insects does the Canker-worm belong?

S. To the lepidoptera.

T. To which division of the lepidoptera—the butterflies, sphinges or moths?

S. To the moths.

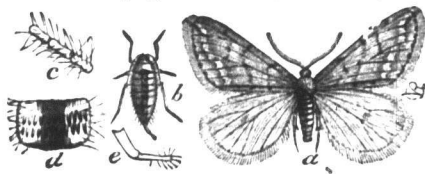
T. Geometry is the science which enabled people first to measure the earth. Hence the moths whose larvæ are so constructed that they loop when moving about as if they were measuring everything, are put in a class by themselves called the *geometrid* moths.

S. Does the other Canker-worm—the *Spring* one—belong to the geometrids.

T. Yes. It was once thought to be only a variety of the *Fall* Canker-worm, the only great difference in its habit being that it generally remains in its cocoon all winter until the first warm days in spring, when it comes out to deposit its eggs as the other species did in the fall.

JACK. But it is different in all its stages from the *fall* species—not very much, but quite enough to be very distinct.

T. Very good, Jack; let us just compare the two species. Here is the male moth at a; the female at b with its ovipositor, or egg placer,

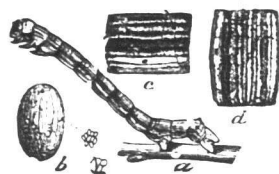


SPRING CANKER-WORM (Imago).

(which the other species has not), magnified at e. A segment of its body is magnified at d and shows two rows of minute reddish spines on it. A portion of its antenna is shown magnified at c.

S. Are its eggs laid like those of the *Fall* Canker-worm.

T. No, not so regularly, generally in small masses in the crevices of the bark as shown of natural size and with one egg magnified here at b. The egg is different in shape also; as are the markings on the body of the caterpillar. c is a magnified side view of one of its segments, and d a back view. The young caterpillar is of a dark olive green or brown with a black shining head, and a black plate on the next segment. They are very variable in the color of the bands, stripes, and mottlings when older. As they become very numerous under favorable circumstances and strip whole orchards of their leaves before the end of June when they enter the ground, let us find out how we can prevent their depredations.



SPRING CANKER-WORM (Eggs and larva).

JACK. As the females have no wings they cannot place any eggs on the trees unless they walk up from the ground along their trunks. I have seen people tie broad bands of paper with tar or some sticky sub-