## EDUCATIONAL REVIEW.

## NATURE STUDY OF ANIMALS.

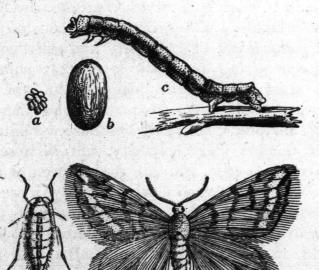
## H. G. PERRY.

No teacher need suspend, even for the winter months, animal nature-study. A moment of reflection dissipates all fear of the stillness, dreariness, and cold of this vigorous season. The forbidding snows tell many stories of comedy and tragedy in the lives of the creatures around us that the summer fields forever wrap in mystic silence; and besides, for many forms, it may prove to be the most convenient time, and for others the most natural.

## THE CANKER-WORM.

The canker-worm moth should naturally be studied at this time of year. Mention was made of this insect in an earlier issue of these articles, but as little was said of it at that time we venture to select it as our chief subject for this issue.

On mild days and evenings during November and December, one frequently finds ashy-grey silken-winged moths, flitting about in the vicinity of shade trees and orchards. A captured specimen shows that the wings are almost transparent, and one wonders why so frail a creature selects so bleak a season in which to appear. But delicate though it seems to be, it is nevertheless one of the hardiest of its race or order, and seems to require a considerable degree of cold for its perfect development. Compare its active season with the active period of other moths and butterflies.



Where has the canker-worm moth spent the summer? Where was the cocoon through all the warmth of summer and the beautiful days of early autumn?

Note that these moths are never seen till after the first severe frost of fall or early winter, a frost heavy enough to freeze the ground; then during the first warm spell they appear, and continue to arrive during every mild spell of winter and early spring, that is warm enough to soften the ground to the depth of an inch or so. One naturalist suggests that it shows its wisdom in putting off its arrival till after the summer birds have left. In many other ways also it is one of the most remarkable little insects that we could select at any time of year for nature-study work.

After a few further descriptive features, just enough for you to recognize it when you find it, we prefer to leave the whole subject in your hands, and you may go out and observe the color markings on its wings, the shape and position of the antennae, its power of flight, its food; the time of day it is most active, and many other interesting facts about it not recorded in books. Make drawings, write descriptions, and record facts from your own investigation.

The forms we find flying are all males; no one has ever yet found the female flying. She is entirely wingless, and has a body larger than that of the male. While the male is sporting on his beautiful wings, she is also taking active exercise in travelling up the tree, on her way to the upper branches. In this journey she is usually accompanied by one or more males flitting close around, and is then easily located; when alone she is correspondingly hard to find on account of her protective coloration, her body being about the same shade of color as the bark of the tree.

Collect several and cage securely in fruit jars, along with apple tree twigs stood upright. They are most abundant on the trunks of apple trees during mild evenings, and may be easily located with a lantern. Watch them closely and you will soon find masses of eggs on the twigs. Notice their arrangement. Are they in regular or, irregular masses? How do they compare

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Fig. 1. The Spring Canker-worm. a, egg mass; b, egg (magnified); c, larva; d, female moth; e, male moth. with those pictured in Fig. 2? Each female is said to lay over one hundred eggs, some say they average as many as one hundred and eighty-five.