

THE EARLY ASPEN-LEAF CURLER.

(Proteopteryx oregonana Wislm.)

The years 1917-18 were noteworthy, in an entomological sense, owing to the abundance of three microlepidopterous leaf-curling larvæ all of which attacked aspen poplar, *Populus tremuloides*. One of these insects has already been dealt with,* while the habits of a second are described below.

The larval habits of the Early Aspen-leaf Curler are similar in many respects to those of other leaf-curling species but unlike the other two prevalent during the period mentioned above, complete their life the same season that they hatch from eggs, instead of hibernating, while the moths differ by emerging from overwintering pupæ very early in the spring. In 1918, they were on the wing in millions by the end of March.

The moths are of a dull blackish-brown colour above, indistinctly barred with darker tints, the secondaries being lighter. They may be met with at any time during the day when they rise from the leaves as one walks through the woods. Usually, however, the time of greatest activity is towards evening, approximately an hour before sunset until dark. It is then that they rise in large swarms and fly backward and forward over the tops of the trees. This is when the air is still. A very light breeze, however, is sufficient to force them downward. It is due to the wind that they gather in the shelter of the woods and drop sufficiently close to the ground to be watched with ease. Observed under such circumstances they were seen to fly around the lower trees in a similar manner to their movement about the higher ones but in addition to the general habits on the wing they were also found to possess another one which consisted of alighting upon a twig a foot or more from its extremity and then running to the top where they would remain stationary for a few moments as if attempting to secure nourishment from the bud, after which they would arise again to join the flying swarm. The moths continued in their evening activities, whenever the atmosphere was sufficiently warm, for more than a week before oviposition commenced and remained in large congregations throughout most of the egg-laying period.

The eggs are flat, scale-like objects, of a dark clay-yellow and thus resemble very closely certain marks always present upon the twigs. They are usually deposited singly but occasionally three or more may be found slightly overlapping each other. In 1918, eggs were deposited from April 6 to approximately the 20th. They are always found upon the smaller twigs and there seems to be some attempt made to place them around the scars or buds where they are less detected. With calm weather most of the eggs are laid on the higher trees but otherwise they may be found comparatively close to the ground on quite small trees, or near the tips of the lower branches of larger ones. It is due to these habits that certain clumps of trees may be almost entirely defoliated later on, while others in the same neighborhood escape with comparatively small injury.

Larvæ usually begin to emerge towards the end of April and are numerous a few days later. When they first appear the caterpillars are somewhat flattened objects with a head exceeding the body in width. They are dull yellowish in colour, with a black head and dark but duller thoracic shield. The larvae become of normal cylindrical shape after moulting and change very little in colour

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