

LARVAL HABITS OF A GOLDEN-ROD BORING PLUME.

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The Golden-rods in the vicinity of Buffalo—especially observed on Squaw Island—harbor the larvæ of two plume moths, one boring the branches, stem and root, the other using the foliage. I have sent the moths to Mr. Charles Fish, of Old Town, Maine, for determination; he concludes that they are both unnamed, and he will describe and name them in a general paper in preparation on the American species. As a somewhat more detailed account of their habits than a technical paper will allow seems to be desirable, I have prepared these notes, relating mostly to the borer.

For several years successively I have observed that during the latter half of August the ends of many branches and stems of the Golden-rods in the locality mentioned above began to wither and finally die; on examination I have repeatedly found the cause to be a slender, dull yellow moth's larva. It appears to enter the twig a few inches below the apex, or, as it has grown somewhat after the destroyer began its work, pretty near the end where the tissues are tender. I have not seen the eggs, but should suspect their presence during first two weeks of July, at the growing point. It ordinarily moves outwards, pushing its dust-like fragments out at the point of entrance. The larva, when first examined, August 22nd, was .3 of an inch long; color light yellow, head and shield darker, the oblique anal plate almost black, bearing hairs and hooks, dorsal and subdorsal lines pinkish. By the middle of September it abandons the branches, being then .45 of an inch in length, and bores into the stock a few inches above the ground; it makes its way down the pith into the roots, well under ground, where it passes the winter. I fetched several examples from the fields in January for examination; they were then .58 to .6 of an inch in length, lighter in color, with the longitudinal lines of pink brighter than in autumn, the eighth segment conspicuously marked on the back by pink. There are few hairs over their smooth bodies; on the last ring, however, there is a brown or black chitinous disc, with a circle of long, brown hairs about its circumference; in the centre of this disc there is a small papilla with two stout, straight, black teeth pointing rearwards. These teeth are hooked upwards in the autumn stage. The hairs render the plate sensitive to touch, and help to brush fragments from