

## *Tortrix pallorana* Rob., A Pest of Pine Trees in Indiana<sup>1</sup>

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The leafroller, *Tortrix pallorana* Rob., has been found annually since 1955 to be a common pest of young pine trees in Indiana. Infestations as high as 30 per cent have been observed in several pine plantations. McDaniel (5) reported the same pest in Michigan in 1936 with infestations as high as 95 percent. This insect attacks all of the commonly grown species of pine, including jack, red, Scotch and white pines.

The injurious stage of the leafroller is the larva. During April and May, the greenish larvae, which fed on other hosts the previous fall, migrate to pine and web together the terminal and lateral areas of the soft new growth and feed on the needles and tender bark. Severely scarred twigs break off and, frequently, less severely injured branches exhibit fasciation. This injury is most damaging in nurseries and young pine plantations (Fig. 1). When the terminal area of a young pine tree is

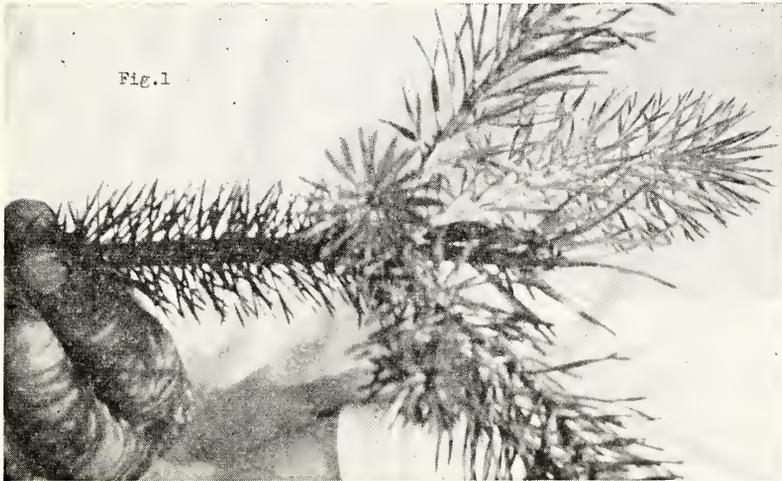


Fig. 1. Injury to a Scotch pine seedling, note the central leader which has broken over as a result of the feeding of *Tortrix pallorana* Rob.

killed, the tree is ruined for either ornamental use or for a Christmas tree.

At LaPorte, Indiana, the adult moths were collected in large numbers in a "black light" insect trap early in June, 1959. The peak of adult emergence occurred on the night of June 7 when 49 adults were captured. Scattered emergence continued until about June 18. When the adult moths were disturbed, they made short flights near the host plant. The adults of the second generation emerged from July 25 until September 11,

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with peak emergence on August 21. The second generation, however, did not attack pine in the fall. The new growth of pine had hardened by July and was apparently no longer suitable for food. A similar observation was reported by McDaniel (5).

The pale green eggs are laid in shingled masses on the leaves of the host plants, other than pine. When ready to hatch, they become orange in color. Snow and McClellan (13) report an average of 61 eggs per mass.

This leafroller is polyphagous and has been reported to attack a large number of host plants: Leonard (4) reported cherry, silphium, verbena and clover (wild) in New York; Dean (1), Smith et al. (11) and Snow and McClellan (13) reported its occurrence on alfalfa in both Kansas and Utah; Schott (9) reported it on roses in New Jersey; Smith (12) found it on strawberries in Missouri; McDaniel (5) reported it on pines in Michigan; Newcomer and Carlson (8) added apple, pear, asparagus, sweet clover, dock, goldenrod, lambsquarter, milkweed, mullein, sumac, sycamore, Canada thistle and willow to the list from Washington; and Neunzig and Gyrisco (7) reported it on birdsfoot trefoil in New York. The summer generation of the leafroller in Indiana apparently feeds on some of the above hosts during July and again in the fall.

In Indiana, *T. pallorana* Rob., or its injury, has been observed on pine in widely separated regions of the state, including Elkhart, Fulton, Harrison, LaPorte, Lawrence and Starke counties.

Frequently, a related species, *Platynota flavedana* Clem., has been found attacking pine along with *T. pallorana* Rob. The larva of *P. flavedana* Clem. is brown and easily distinguished from the green larvae of *T. pallorana* Rob. Light trap catches of the adults of *P. flavedana* Clem. indicated a life history almost identical to that of *T. pallorana* Rob., but the frequency of its appearance on pine and in light traps was much lower.

Summerland and Hamilton (14) noted *P. flavedana* Clem. as injurious to peaches in southern Indiana, Illinois and Kentucky; Smith (10) listed it as a general feeder in New Jersey; Forbes (2) reported this species as generally distributed in New York; Hamilton (3) discussed it as a pest of roses in New Jersey; and Neiswander (6) found it injuring strawberries in Ohio.

Control of leafroller injury to pine trees involves both weed control, to eliminate its other hosts, and spraying the pine trees early in April with an insecticide, such as TDE (Rhothane), to kill the larvae.

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