Penn State **Extension**

PEST ALERT

Omnivorous Leafroller, *Platynota stultana* (Lepidoptera: Tortricidae)

The omnivorous leafroller has recently been detected and confirmed in a greenhouse in Pennsylvania. Your assistance is needed in monitoring for this pest both indoors and outdoors in Pennsylvania.

Identification and Diagnostic Characteristics

Adults: The front wing length of the male is 4.5-7.0 mm and the front wing length of the female is 6.5-9.0 mm. The color of the front wing is usually golden brown to dark brown (Fig. 1). The wing color can vary greatly. Male front wings are generally dark brown nearest the thorax and golden brown on half of the tip of the wing. The front wings on a female are more uniform color and markings are usually less distinct. The variegated leafroller, *Platynota flavendana*, a common pest of apple in southern Pennsylvania, Virginia, and West Virginia, is the eastern species most resembling the omnivorous leafroller, but it's not very common outside orchards. The most important eastern leafroller pest in this group is the tufted apple bud moth, *Platynota idaeusalis*, that's similar in size and shape to the omnivorous leafroller, but is much darker brown.

Larvae: Mature larvae are approximately 12-15 mm long and translucent cream. The head and the top of the first segment of the thorax are yellowish brown to dark brown (Fig. 2). The lateral rear margins of the top of the thorax are shaded with dark brown on some individuals. This species has an anal comb with 5-6 teeth.

Pupae: Fully developed pupae are dark brown and may be 4.0-9.8 mm long.

Similar Species

The omnivorous leafroller, *Platynota stultana* is similar to other species in the genus *Platynota* that are found in the eastern United States. Males can be separated from most other *Platynota* by the absence of a well-developed flap or fold at the base of the front wing that contains specialized sex scales. A combination of front wing pattern and very long labial palpi serves to separate *P. stultana* adults from other tortricid species. The larval stage of the omnivorous leafroller may appear similar to other tortricid larvae, including the light brown apple moth, *Epiphyas postvittana*.

Fig. 1 *An adult female omnivorous leafroller.*

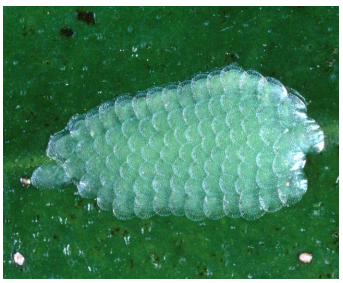

Fig. 2 *(top) Mature larva of the omnivorous leafroller.* **Fig. 3** *(Left) Egg mass of the omnivorous leafroller.* **Fig. 4** *(right) Foliar damage caused by the larval stage of the omnivorous leafroller.*

Life history

Platynota stultana is reported to complete 4-6 generations in California. Adults may be present year round.

Eggs are laid in masses (Fig. 3) containing an average of 97 individual eggs. The green egg masses hatch in about a week and the white hatched egg masses much easier to detect. Newly hatched larvae move toward the top of the plant and feed within a bud or between two leaves of a host plant. Young larvae may also disperse to other hosts by ballooning in the wind on a silk thread. Later instars (stage immediately after molting) feed within a shelter constructed of rolled or folded leaves (Fig. 4). It has been reported that in greenhouse conditions larvae complete 5-6 instars in a period of 20-30 days depending on the temperature. Third through fifth instar larvae of the last generation overwinter in webbed nests in ground cover of the crop. Pupation takes place in a rolled leaf. Under Pennsylvania weather conditions, we would expect no more than 2-3 generations a year in the field. In greenhouses the number of generations produced would be higher.

Host plants

Changes in host plant preferences were noted when the omnivorous leafroller increased its range into northern California. It appears to have expanded its host plant range to a wider variety of non-native plants.

The following is a partial host plant list for the omnivorous leafroller. Please note that *P. stultana* has been recorded on other plant families (on at least 28) some of which are not listed below: *Albizia* sp., alfalfa (*Medicago sativa*), amaranth (*Amaranthus* sp.), apple (*Malus* sp.), *Arachis* sp., *Aster* sp., asparagus (*Asperagus officinalis*), avocado (*Persea americana*), beans (*Phaseolus* sp.), blackberry and raspberry (*Rubus* spp.), blackeyed pea (*Vigna unguiculata*), carnation (*Dianthus caryophyllus*), celery (*Apium graveolens*), clover (*Trifolium* sp.), sugar beet (*Beta vulgaris*), corn (*Zea mays*), *Cotoneaster* spp., cotton (*Gossypium* sp.), currant (*Ribes* spp.), *Cyclamen* spp., daisy (*Chrysanthemum* spp.), *Eucalyptus* spp., *Gardenia* spp., geranium (*Pelargonium* spp.), *Ginkgo* spp., grape (*Vitis* spp.), grapefruit (*Citrus* spp.), grasses (various Poaceae), groundsel (*Packera* spp.), juniper (*Juniperus* spp.), lambsquarters (*Chenopodium album*), lemon (*Citrus x limon*), lettuce (*Latusca* sp.), mallow (*Malva* spp.), mandarin (*Citrus* spp.), mint (*Mentha* sp.), navel orange (*Citrus* sp.), peach (*Prunus persica*), peanut (*Arachis* sp.), pear (*Pyrus* spp.), pepper (*Capsicum* spp.), pine (*Pinus* spp.), ragweed (*Ambrosia* spp.), rose (*Rosa* spp.), rose moss (*Portulaca grandiflora*), shaddock (*Citrus maxima*), sorghum (*Sorghum bicolor*), soybean (*Glycine max*), spiny fiddlewood (*Citharexylum spinosum*), strawberry, (*Fragaria* sp.), tara vine (*Actinidia arguta*), tomato (*Solanum lycopersicum*), walnut (husks) (*Juglans regia*), and yew (*Taxus* spp.). Consult the reference below (Gilligan and Epstein 2012) for a more extensive list of host plants.

This omnivorous leafroller can be a serious pest of greenhouse plants and vineyards. Major economically important hosts include alfalfa, *Citrus* sp., corn, cotton, grape, peach, pear, and pepper. Feeding damage to grape leads to bunch-rot, resulting in crop losses as high as 25-80%.

Distribution

The omnivorous leafroller is known from Mexico. It has been recorded from California, Arizona, Hawaii, Texas, Florida, and Pennsylvania. Records from the eastern United States in Washington, D. C. and Virginia were confirmed in the 1930s.

Taxonomy

Current valid scientific name: *Platynota stultana* Walsingham
Common names: omnivorous leafroller
Synonyms: *Sparganothis chiquitana, Sparganothis stultana, Platynota chiquitana*

Reporting a Possible Detection

If you believe you may have observed damage or a life stage of the omnivorous leafroller, please contact a plant inspector in your regional office of the Pennsylvania Department of Agriculture Regional Office (http://goo.gl/wd8Sg9) or an extension educator in the local Penn State Extension office (http://extension.psu.edu/counties).

Selected References

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Authors

This pest alert was written by Gregory A. Hoover, Ornamental Extension Entomologist, and David J. Biddinger, Tree Fruit Research Entomologist, Dept. of Entomology, Pennsylvania State University, University Park, PA. June 2014

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