



*Prays nephelomima*

## Yponomeutidae

### Ermine Moths

### Biosecurity

#### BIOSECURITY ALERT

This Family is of Biosecurity Concern

### Occurrence

This family occurs in Australia.

### Background

The Yponomeutidae is a relatively small family of around 400 named species; most are found in the tropics, and there are 50 known Australian species. Ermine moths are small to medium-sized and the species are diverse in morphology and biology. Caterpillars are diverse in lifestyle and include leaf-webbers, leaf skeletonisers, leafminers, needleminers and fruit borers. Some species are considered to be minor pests in agriculture, horticulture and forestry.

### Subfamilies

- Argyresthiinae
- Attevininae
- Praydinae
- Saridoscelinae
- Scythropiinae
- Yponomeutinae

### Short Description

Caterpillars from this family are small at around 15 mm in length, maximum. They tend to be colourful, often with longitudinal stripes. They are leafminers but also attack flowers and bore into fruit and seeds. The caterpillars are not hairy, as they only have primary setae; although these can be relatively long (Fig. 1). They sometimes feed externally and may form communal webs with large amounts of silk (Fig. 2).

### Diagnosis

Adapted from Dugdale *et al.* (1999) and Stehr *et al.* (1987)

1. Thoracic legs – the pretarsus or **claw** is unusually long and straight. In Yponomeutidae, but absent in the Argyresthiinae (Fig. 3).
2. Abdominal segments with SD2 absent. In Argyresthiinae.
3. A10 – excluding the **suranal shield**, with not more than nine setae on each side. In Argyresthiinae.
4. Prolegs
  - a. Crochets
    - i. **multiserial circle**. In Yponomeutinae.
    - ii. **uniserial**. In Argyresthiinae.



**Fig. 1.** Lateral view of the mature caterpillar of citrus flower borer *Prays nephelomima* (Yponomeutidae: Praydinae). Photo by Caroline Harding (MAF 2011). Creative Commons Attribution 3.0 Australia Licence



**Fig. 2.** Mature yponomeutid caterpillars forming a communal web in Bavarian farmland. Photo by NP Holmes - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=6846411>



**Fig. 3.** Anterior view of the mature caterpillar of citrus flower moth *Prays nephelomima* (Yponomeutidae: Praydinae). Note the unusually long claw at the end of the thoracic legs. Photo by Caroline Harding (MAF 2011). Creative Commons Attribution 3.0 Australia Licence.

### Detailed Description

Adapted from Stehr *et al.* (1987).

**Head:** The head is hypognathous (Fig. 3). The frontoclypeus is higher than wide extending about two-thirds to the epicranial notch (Fig. 4). There are six stemmata arranged in an oblique rectangle with 1 and 2 dorsad and 5 and 6 ventrad of seta S1. Sometimes there is a gap between two and three.

**Thorax:** The prothoracic shield is usually well-developed and pinacula are variably coloured but often brown. T1 – The L group is trisetose as is typical for Microlepidoptera (rarely bisetose e.g. *Ocnerostoma* (Yponomeutinae).)

**Abdomen:** L2 is anteroventrad of L1 on A1-A8, distant from each other and on separate pinacula, and distant from L3. SD1 is anterodorsad to the spiracle on A1-A8. D2s are closer together than D1s on A9. L1 and L2 are approximate on A9 and on one pinaculum. A10 usually has a well-developed suranal shield.

Prolegs are normal and present on A3-A6 and A10 (Fig. 1). Crochets are uniordinal in multiserial circles but are uniserial in Argyresthiinae, and rarely biserial.



**Fig. 4.** Head of mature caterpillar of citrus flower moth *Prays nephelomima* (Yponomeutidae: Praydinae). Photo by Caroline Harding (MAF 2011). Creative Commons Attribution 3.0 Australia Licence

## Species of Biosecurity Concern

### THE FOLLOWING SPECIES IS OF BIOSECURITY CONCERN TO NORTHERN AUSTRALIA

This species is of biosecurity concern to northern Australia. It feeds on citrus fruit and is an important pest of pomelo in Vietnam. Little information is available on the larvae.

***Prays endocarpa* (citrus pock caterpillar, citrus fruit moth, citrus rind borer) (Yponomeutidae: Praydinae)**

#### Description

To be updated. At this stage very little information is available on immature stages, including images.

#### Diagnosis

As above.

#### Biology and Feeding Damage

Early instar caterpillars mine the peel of citrus fruit such as pomelos, causing premature fruit fall and/or creating gall-like swellings on the fruit surface (pocks) (Vang *et al.* 2018). Larval development is completed in the galls; the larvae never leave the endocarp. The mature caterpillar leaves the fruit through an exit hole before pupating on the outer surface of the fruit or on twigs and leaves.

#### Current Distribution

- India
- Southeast Asia Vietnam
- Pacific region

See (EFSA 2008): <https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2008.681>

#### Caterpillar Host Plants

- citrus fruit including pomelo (*Citrus grandis*), oranges, mandarins, lemons, limes, and grapefruit
- other Rutaceae including the bael tree (*Aegle marmelos*)

From EFSA (2009). <https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2008.681>

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## Authors

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