

Life stages and biology of *Filnota bruniceps* (Felder & Roggenhofer) (Lepidoptera: Elachistidae: Depressariinae) from Costa Rica



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Introduction: For over 100 years, *Filnota bruniceps* was known only from a single adult specimen from Colombia, South America, until it was rediscovered in Mexico, and later by K. Nishida in Costa Rica. All life stages of this species are presented in this poster presentation.

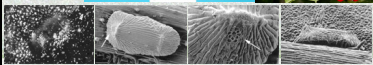
The adults of *F. bruniceps* are found throughout the year in Costa Rica. The host, *Rivina humilis* (L.) [Phytolaccaceae], is a perennial plant and is found all year long. Adults rest in the daytime on the upper surfaces of leaves and appear to indicate to potential predators a "false eyespot" on the apical part of the forewing. This false eyespot pattern is common in nature, and is found in other Lepidoptera, other insects, and among vertebrates as well.



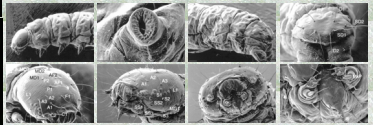
Life stages and biology

In the field, **eggs** are laid singly on grooves of the stem or branches, along the midvein or other major veins the underside surface of leaves, and on leaf petiole. However, under laboratory conditions, most of the eggs were laid in clusters.

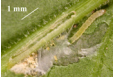
The 5th instar **larvae** range from 9.0 - 11.5 mm. Early instars live as leaf-scrapers, leaf vein borer, and in later instars leaf-tiers. They are generally creamy yellow to pale creamy brown with greenish color, but turn to reddish-brown before pupation. The chaetotaxy and sensilla associated with the mouthparts are shown using scanning electron micrographs. In addition, scanning electron micrographs are used to document structures of the thorax and features of the abdomen (note the crochet arrangement and the anal shield).



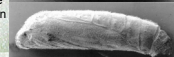
Eggs are transparent, somewhat saddle-shaped dorsally (the egg is longer than wide, with two transverse ridges near each end), with the micropyle on one end, adjacent to one of the transverse ridges.



Larvae responded with vigorous jump-and-roll behavior when they were molested while outside of the leaf-roll.



Pupation occurs within the leaf litter on the ground. The **pupae** range from 5.2 - 5.5 mm. The entire body is velvet-like as it is covered with a dense mat of fine microtrichiae. The pupa is deeply excavated laterally between the labrum and the proximal margins of the maxillae, and possesses a pair of ridge-like structure on the dorsolateral part of the head.



Cricket-like?



Adults are diurnal to crepuscular and exhibit an unusual survival behavior for Microlepidoptera. When at rest, conspicuous adults roll their wings around their abdomen, exposing an "eye spot" on each side of the posterior end of the forewing while the terminal portion of the antennae extend well beyond the posterior wing margins, giving a "false head" search image to would be predators.

