

SIMPLIFIED SCREENING AID FOR AUTOGRAPHHA GAMMA IN APHIS STICKY TRAPS

Autographa gamma is a common APHIS target pest. Identification of this pest is complicated for non-specialists. The first problem is that line drawings of the genitalia in the PKNTO series do not provide the user with enough detail to recognize *A. gamma*. There is also a lack of information on which non-target Plusiinae are likely to be found in sticky trap samples.

This document illustrates the genitalia of *A. gamma* and compares it to *A. californica* and *Rachiplusia ou* which are sometimes collected in APHIS traps. Both of these species are similar enough to *A. gamma* in wing color to cause concern. Only males are discussed because females are usually not found in trap samples. The genital terminology and characters used to identify these species follows Poole and LaFontaine (1991). Consult Miller et al. (1993) for a procedure on how to prepare genitalia of Lepidoptera from sticky traps.

Autographa gamma, when viewed under low power (20x), has a simple valve with a thin process and two tufts of scent hairs (Fig. 1). The aedoeagus was removed for clarity.

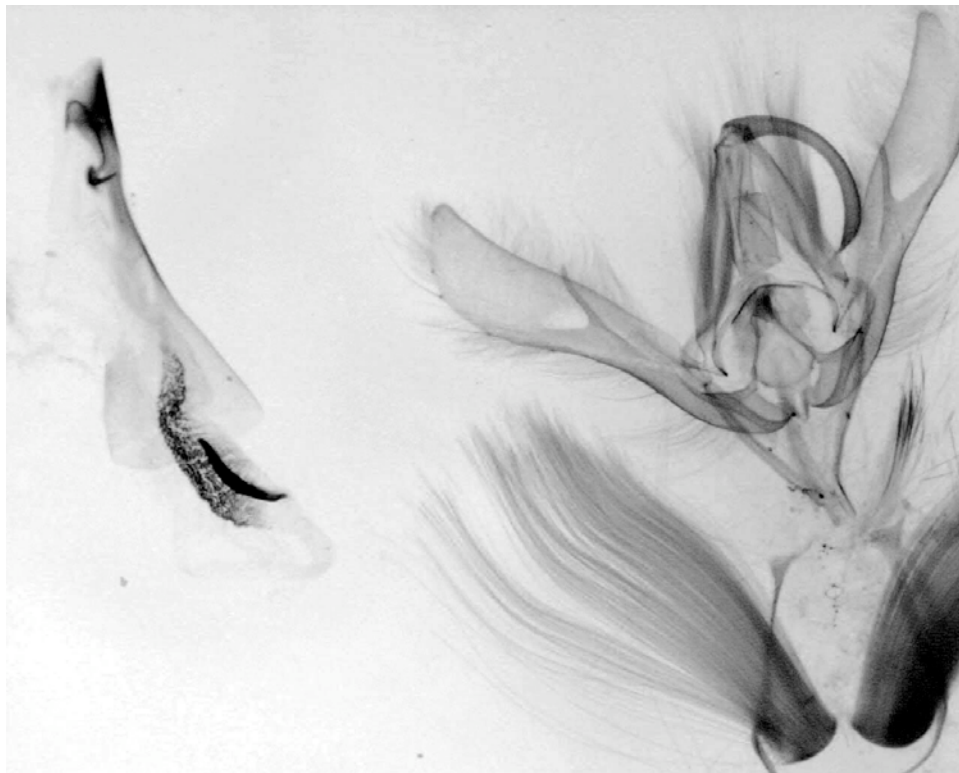


Fig. 1. Male genitalia of *Autographa gamma* (20x).

The aedoeagus of *A. gamma* has two spines, one curved spine at the base of the vesica (Fig. 2), and another longer curved spine called the apical cornutus (Fig. 3).



Fig. 2. Curved apical spine on the aedoeagus of *A. gamma* (200x).



Fig. 3. Apical cornutus of *A. gamma* (200x).

A portion of the vesica of the aedoeagus in *A. gamma* is set with pigmented pointed granules (Fig. 4), stained red in this photograph for clarity. These granules surround the apical cornutus (Fig. 3).

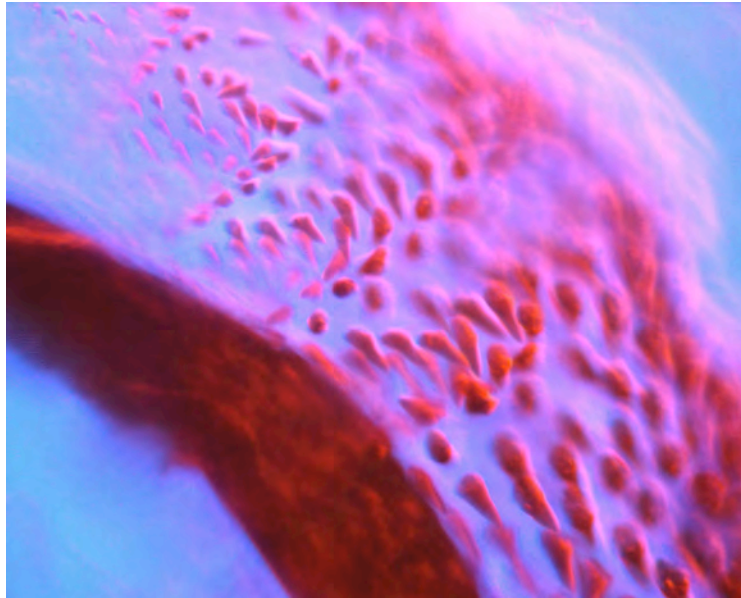


Fig. 4. Pigmented pointed granules of the vesica of *A. gamma* (Rheinburg illumination, 400x).

In the eastern United States, *A. gamma* is most likely to be confused with *Rachiplusia ou*. This species has been found in *A. gamma* sticky traps from Michigan and South Carolina. The valve of *R. ou* lacks a fingerlike projection on the inner surface (Fig. 5) which is present in *A. gamma* (Fig. 1).



Fig. 5. Valve of *Rachiplusia ou* (100x).

The aedoeagus of *R. ou* has several apical cornuti in a cluster, again stained red for clarity (Fig. 6). Only one is present in *A. gamma* (Fig. 3).

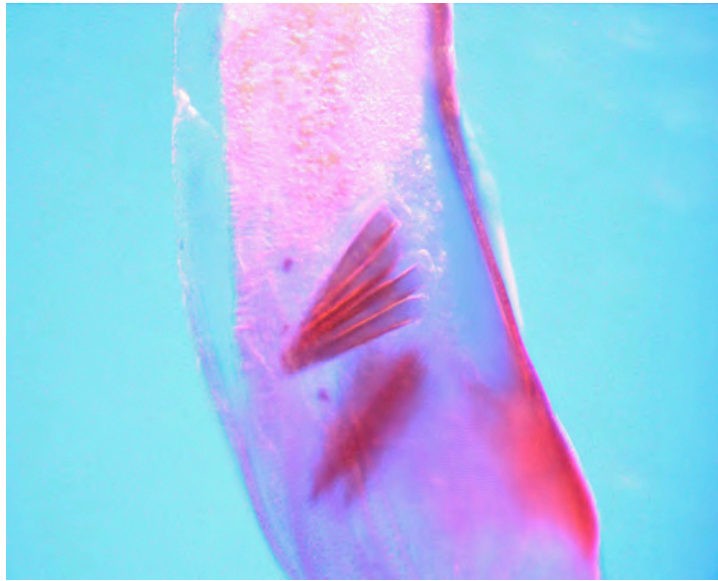


Fig. 6. Apical cornuti of *R. ou* (Rheinburg illumination, 100x).

In the western USA, *A. gamma* is easily confused with *Autographa californica*. The most obvious difference in is the shape of the apical cornutus. In *A. californica* the cornutus has a broad flange on one side (Fig. 7) whereas the cornutus of *A. gamma* is shaped like Fig 3. Otherwise the genitalia are almost identical to a non-specialist. *Autographa californica* has been found in traps from Oregon.



Fig. 7. The cornutus of *Autographa californica*

Autographa ampla and *Anagrapha falcifera* are also found in *A. gamma* traps but their wing color is unlike *A. gamma* (see the color plates in LaFontaine and Poole 1991).

Literature Cited

Miller, RS, S. Passoa, RD Waltz and V. Mastro. 1993. Insect Removal from Sticky Traps Using a Citrus Oil Solvent. Ent. News 104(4): 209-213

LaFontaine, JD. And RW Poole. 1991. Moths of America, north of Mexico. Noctuidae (part). Fascicle 25.1. 182 pages.