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TORTRICIDAE - *Crocidosema aporema* (Walsingham)

Taxonomy

Tortricoidea: Tortricidae: Olethreutinae: Eucosmini: *Crocidosema aporema* (Walsingham)

Common names: bean shoot moth, bud borer

Synonyms: *Epinotia opposita*

Larval diagnosis (Summary)

- Head with black band extending from postgenal suture
- 30-40 biordinal crochets on abdominal prolegs
- Whitish with moderately small, pale tan pinacula
- Integument with conspicuous short spines
- L group trisetose on A9
- Found primarily on Fabaceae

Host/origin information

Larvae of *C. aporema* are usually intercepted on beans from Central and South America. More than 50% of all interceptions are from Guatemala, and 25% are from Peru.

Origin	Host(s)
Guatemala	*Phaseolus*
Peru	*Phaseolus*, *Pisum*

Recorded distribution

Crocidosema aporema is distributed throughout Central and South America. It is also likely present in southern Mexico (most recent records are from Chiapas in 1981) and the Caribbean. Five specimens were collected in Brownsville, Texas in 1941 (and possibly others in 1944). There are no recent U.S. records for this species (J. Baixeras pers. comm. 2013).

Identification authority (Summary)

Larvae of *C. aporema* should originate from the New World, feed on Fabaceae (usually beans), and have the combination of morphological characters listed above, including 30-40 crochets on the abdominal prolegs. Larvae matching this description, but with 13-20 crochets on the prolegs and feeding on Malvaceae are *C. plebejana*. Larvae from other hosts or not matching this combination of host/crochet counts should be identified only to genus; see the Detailed Information tab.

Pest characterization

(Based on Cavey 2001, Brown 2011, J. Baixeras pers. comm. 2013)

- Taxonomy: **High.** Species identification is often possible (with host/origin data).
- Distribution: **Medium.** Despite historical records, *C. aporema* is likely not currently present in the U.S.
- Potential Impact: **High.** *Crocidosema aporema* is a pest species.

This ranking characterizes *Crocidosema aporema* as quarantine significant for the U.S.

Larval diagnosis (Detailed)

Brown (2011) divided intercepted tortricid larvae into four "types." Larvae of *C. aporema* are grouped under the "Olethreutinae type" with D1 and SD1 on the same pinaculum on A9, the L group on T1 not extending beneath the spiracle, and an anal comb present. He used the following characters to identify larvae of *C. aporema*: head with black band extending from postgenal


Fig. 1: Late instar, lateral view


Fig. 2: Late instar, lateral view


Fig. 3: Late instar, lateral view

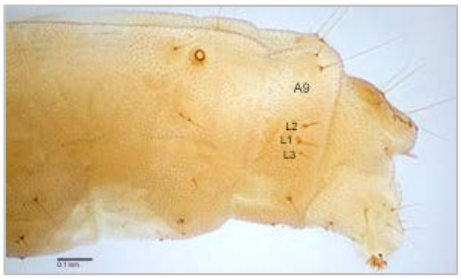


Fig. 4: L group on A9 (photo of *C. plebejana*)

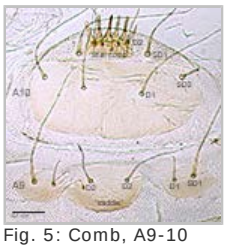


Fig. 5: Comb, A9-10


Fig. 6: Anal comb


Fig. 7: *C. aporema*


Fig. 6: *C. plebejana*

suture to seta S2 (= O2); SV group counts 3:3:2:2:2(1); abdominal crochets biordinal, 31-36; whitish with moderately small, pale tan pinacula; integument with conspicuous short spines; primarily on Fabaceae (from Central and South America, Caribbean). Other characters from Brown (2011) include: pinacula small or moderate, pale or tan; prothoracic and anal shields with or without distinct pattern; L group trisetose on A9; SV counts on A1,2,7,8,9 usually less than 3:3:3:2:2.

MacKay (1959) treated *C. aporema* in her "*Epinotia*, Group 5" (as *Epinotia opposita*). Her diagnostic characters included: head with blackish ocellar area and lateral bar on cheek; spinulation of integument darker than body color; anal fork moderately developed; SV group counts 3:3:2:2:2; D1s on the anal shield almost as long as D2s; abdominal crochets uniordinal, partially biordinal, or biordinal, 30-40 (MacKay 1959, Fig. 90). Morey (1972) described and illustrated the life stages of *C. aporema* (as *E. aporema*) in detail and noted 32 crochets on the abdominal prolegs. We have examined individuals in which the abdominal crochets are partially triordinal.

There seems to be some confusion as to the identity of *Crocidosema* larvae intercepted at U.S. ports of entry. The PestID database contains only records of *C. aporema* along with a few records of "*Crocidosema* sp." We have examined several of the larvae listed in the database as *C. aporema* and determined them to be *C. plebejana*. *Crocidosema plebejana* is a common cosmopolitan species that feeds primarily on Malvaceae, but it is likely found on plants in other families given its wide distribution. Larvae of the two species are morphologically similar, with one distinct difference: the number of crochets is 13-20 in *C. plebejana* (Gilligan and Epstein 2012, MacKay 1959) versus 30-40 in *C. aporema* (Brown 2011, Gilligan and Epstein 2012, MacKay 1959, Morey 1972).

Larval damage caused by *C. aporema* on beans is similar to that caused by *Ecdytolopha fabivora* (formally *Cydia fabivora*); however, larvae of *C. aporema* feed primarily on young leaflets while those of *E. fabivora* feed in the stems and pods. An anal comb is present in *C. aporema* but is absent in *E. fabivora* (Gilligan and Epstein 2012).

Other bean-feeding tortricids in South and Central America include *Amorbia*, *Cydia torostoma*, *Lusterala phaseolana*, and *Platynota* (Gilligan and Epstein 2012). *Amorbia* and *Platynota* can be separated from *C. aporema* by the D1 and SD1 setae on A9, which are located on separate pinacula in these other genera and on the same pinaculum in *C. aporema*. *Cydia* larvae can be separated from *C. aporema* by the lack of an anal comb. *Lusterala phaseolana* has a very unusual larva and is one of only a few species of Tortricidae where the L group on the prothorax is bisetose (Brown and Nishida 2007).


Fig. 9: Head, lateral


Fig. 10: Head


Fig. 11: Hypo. complex


Fig. 12: Mandible

Identification authority (Detailed)

Origin and host can be important clues for the identification of *C. aporema*. Larvae of *C. aporema* should originate from the New World, feed on Fabaceae (usually beans), and have the combination of morphological characters listed above, including 30-40 crochets on the abdominal prolegs. Larvae from outside of the New World or those on hosts outside of Fabaceae (or host unknown) should be identified only to genus. Larvae from Malvaceae that match the above morphological description with only 13-20 crochets on the abdominal prolegs should be identified as *C. plebejana*.

Key to larval Tortricidae intercepted, or potentially encountered, at U.S. ports of entry

Origin records

Crocidosema aporema has been intercepted from the following locations:

Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Venezuela

Origins outside of Central or South America, southern Mexico, or the Caribbean likely represent interceptions of *C. plebejana* and are not listed here.

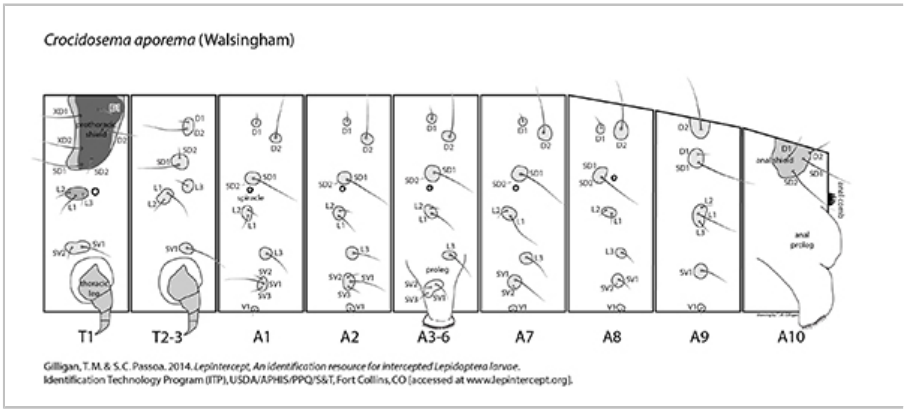
Host records

Crocidosema aporema has been intercepted on the following hosts:

Annona sp., *Araucaria angustifolia*, *Aster* sp., *Cajanus cajan*, *Chenopodium* sp., *Crocosmia* sp., *Cucurbita* sp., *Curcubita* sp., *Dianthus* sp., *Eucalyptus* sp., Fabaceae, *Hypericum* sp., *Lablab purpureus*, *Lecythis* sp., *Limonium* sp., *Lysimachia* sp., *Mentha* sp., *Momordica* sp., *Ornithogalum* sp., *Phaseolus coccineus*, *Phaseolus lunatus*, *Phaseolus* sp., *Phaseolus vulgaris*, *Physalis* sp., *Pisum sativum*, *Pisum* sp., *Rubus fruticosus*, *Rubus* sp., *Sorghum bicolor*, *Thymus vulgaris*, *Vicia faba*, *Vigna* sp., *Vigna unguiculata*, *Zea mays*

Host records on plants outside of the Fabaceae need confirmation; those on Malvaceae likely represent interceptions of *C. plebejana*.

Setal map



Crocidosema aporema setal map

Click here to download a full-size printable PDF of this larval setal map