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GELECHIIDAE - *Anarsia*

Taxonomy

Gelechioidea: Gelechiidae: Gelechiinae: *Anarsia*

Common names: peach twig borer (*A. lineatella*)

Synonyms: *Ananarsia*

Specimens identified as *Ananarsia lineatella* Zeller are non-reportable (*Non-Rep*).

Larval diagnosis (Summary)

The following characters can be used to diagnose *A. lineatella*; they may not be representative of the entire genus:

- Prespiracular group on T1 surrounds the spiracle
- L group on A9 is bisetose
- Secondary setae present on the anal prolegs and shield
- Crochets on the anal prolegs are divided into two groups
- Anal comb is present, usually with 4 short straight teeth

Host/origin information

Most (>95%) of the records of "*Anarsia* spp." in the PestID database are from Nigera on hosts such as *Gnetum*, Malvaceae, *Pterocarpus*, and *Vernonia*. Nearly all of these records are erroneous and represent species of gelechiids in other genera. In addition, other PestID records from the Old World on non-legume hosts need confirmation. Confirmed records are listed below; please see the detailed Identification Authority section for more information.

Origin	Host(s)
Europe	*Prunus*
Canada	*Prunus*

Recorded distribution

Ananarsia lineatella found throughout Europe, the Middle East, North Africa, and possibly localized areas of Asia north of India. It has been introduced into North America, where it is widespread (Carter 1984). Other *Anarsia* are recorded from Asia and Africa.

Identification authority (Summary)

Anarsia larvae may be identified to *A. lineatella* (*Non-Rep*) if they possess most of the above morphological characters, are found on stone fruit, and originate from North America, Europe, the Middle East, or North Africa. Larvae from Asia and possibly Africa on legumes may be identifiable to *Anarsia* sp. if they possess most of the above morphological characters, but in most cases it is safer to leave these identifications at the family level.

Pest characterization

These characterization ratings are for *Ananarsia lineatella* (based on Carter 1984, Cavey 2001):

- Taxonomy: **High.** Identification to species is routine in late instars.
- Distribution: **Low.** *Anarsia lineatella* occurs in the U.S.
- Potential Impact: **High.** *Anarsia lineatella* is considered a pest.

This ranking characterizes *A. lineatella* as not quarantine significant for the U.S.

Larval diagnosis (Detailed)

The larva of *A. lineatella* was at least partially described by Keifer (1935), Peterson (1962),

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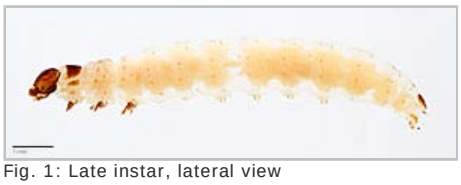


Fig. 1: Late instar, lateral view


Fig. 2: Late instar, lateral view


Fig. 3: Thorax, L-group on T1


Fig. 4: Crochets


Fig. 5: Comb, crochets

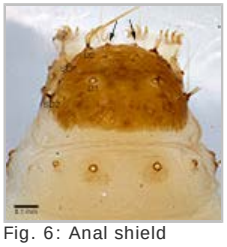


Fig. 6: Anal shield


Fig. 7: Head


Fig. 8: Hypo. complex

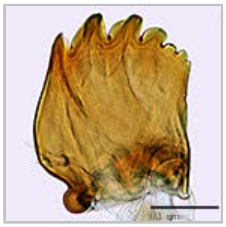


Fig. 9: Mandible

MacKay (1972), Weisman (1986), Stehr (1987) and Schnitzler et al. (2011). The larva is easily recognized by a combination of characters. Among those listed by Keifer (1935) and MacKay (1972), the most obvious are a prespiracular group that surrounds the prothoracic spiracle, a bisetose L group on A9, secondary setae on the anal prolegs and shield, the anal crochets divided into two groups, and the presence of an anal comb. In addition, the lateral setae of the prothorax are in a horizontal line (Weisman 1986). The anal comb figured by Weisman (1986) is diagramatic, see Peterson (1962: L15) and Carter (1984) for more accurate figures.

Identification authority (Detailed)

Accurate identification of *A. lineatella* requires restricting the origins to North America, Europe, Middle East, North Africa and possibly localized areas of Asia north of India (see map in Carter 1984). Weisman (1986) records *A. lineatella* from Latin America but we were unable to confirm this using Carter (1984), Zhang (1994), Saunders et al. (1983) (which tends to include any citation from Central America even if doubtful), Heppner's (1984) checklist of Latin American Lepidoptera, or Gonzalez's (1989) work on quarantine Lepidoptera of Chile. In the Asian fauna, *A. lineatella* was absent from the Australian checklist (Nielson et al. 1996) and Robinson's et al. (1994) introduction to the microlepidoptera of Asia. Records from the Far East also need confirmation. The hosts must be stone fruits. Using these guidelines, the larva of *A. lineatella* is unmistakable.

The smallest larva we have seen that fits the above diagnosis to *A. lineatella* is 4 mm. Interestingly, it does not have the prothoracic spiracle fused to the prespiracular group, a classic character used to define *A. lineatella*. However, the anal crochets are divided, secondary setae occur on the anal shield and the anal comb is present. Thus, these larvae are still recognizable as *A. lineatella* even when very tiny. Full grown larvae are about 11 mm. long (Keifer 1935).

Most of the uncertainly relates to larvae identified as *Anarsia* or near *Anarsia* based on possessing one or two of the key characters of *A. lineatella*, for example, the prespiracular group surrounding the prothoracic spiracle or secondary setae on the anal shield (J. Young pers. obsv.). The genus *Anarsia* occurs throughout Asia, especially on legumes in India (Zhang 1994, Robinson et al. 1994). One species is described from Nigeria on *Guiera* (Zhang 1994). It might be possible to go to genus if the larva is from legumes, a common host for Old World species of *Anarsia*, but it is safer to leave these larvae at family unless they match several of the characters listed for *A. lineatella*. We did not find a larval description to any other *Anarsia* except *lineatella*, thus it is impossible to try to define the genus.

Most (>95%) of the records of "*Anarsia* spp." in the PestID database are from Nigera on hosts such as *Gnetum*, Malvaceae, *Pterocarpus*, and *Vernonia*. Nearly all of these records are erroneous and represent species of gelechiids in other genera. In addition, other PestID records for *Anarsia* from the Old World on non-legume hosts need confirmation.

Origin records

Anarsia have been intercepted from the following locations:

Armenia, Bosnia and Herzegovina, Canada, China, Czech Republic, Dominican Republic, Ecuador, El Salvador, France, Ghana, Greece, Guatemala, India, Iran, Israel, Jamaica, Jordan, Kenya, Liberia, Mali, Mexico, Morocco, Netherlands, Niger, Nigeria, Pakistan, Peru, Philippines, Senegal, South Africa, United Kingdom of Great Britain and N. Ireland, Viet Nam, Zimbabwe

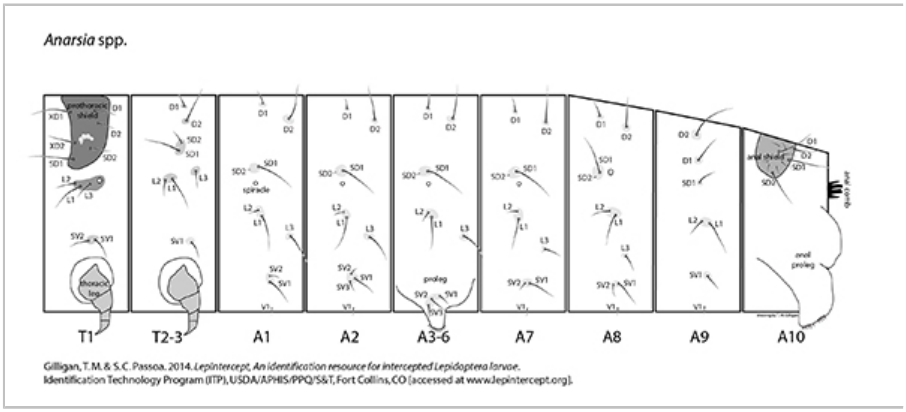
Although the most commonly recorded origin in PestID, records from Nigeria are likely incorrect.

Host records

Anarsia have been intercepted on the following hosts. This list does not include hosts from the >1,600 Nigerian records in PestID that are likely incorrect. Other hosts that are not considered stone fruit or legumes are questionable:

Abelmoschus esculentus, *Aleurites* sp., *Bergera koenigii*, *Brassica oleracea*, *Capsicum* sp., *Cuminum cyminum*, *Erythrina* sp., *Fagus sylvatica*, *Galphimia glauca*, *Gnetum africanum*, Lamiaceae, *Lansium domesticum*, *Litchi chinensis*, *Malus domestica*, *Malus* sp., Malvaceae, *Manilkara zapota*, *Momordica balsamina*, *Ocimum basilicum*, *Phaseolus* sp., *Phaseolus vulgaris*, *Prunus armeniaca*, *Prunus domestica*, *Prunus dulcis*, *Prunus persica*, *Prunus* sp., *Psidium guajava*, *Pterocarpus* sp., *Punica granatum*, *Rubus* sp., *Sechium edule*, *Tamarindus indica*, *Vernonia amygdalina*, *Zea mays*

Setal map



Anarsia setal map

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