ANNOTATED CHECKLIST OF THE PTEROPHORIDAE (LEPIDOPTERA) OF FLORIDA INCLUDING LARVAL FOOD PLANT RECORDS

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ABSTRACT

A checklist of the Pterophoridae of Florida includes 32 species with larval host plant records for 27 species. Species changes and updated nomenclature since Kimball (1965) are noted.

RESUMEN

Se da una lista de los Pterophoridae de la Florida que incluye 32 especies con el registro de sus plantas hospederas para 27 especies. Se incluyen los nuevos cambios de especies y de nomenclatura desde Kimball (1965).

The following list provides an update of the plume moth fauna of Florida with known larval hosts for each species. Kimball (1965) reported 27 species in Florida but there have been several additions to synonomies and changes in generic assignments as reflected in the most recent checklist of North American Pterophoridae by Munroe (1983). Nine species are added to the Florida fauna: Sphenechtes anisodactylus (Walker), Trichoptilus pygmaeus Walsingham, Platyptilia carduidactyla (Riley), Stenoptilodes auriga (Barnes & Lindsey), Exestalis sp., Oidaematophorus eupatori (Fernald), O. paleaceus (Zeller), O. greeni Cashatt, and Oidaematophorus sp. C. Five names are synonymized or omitted (see Table 1 for details). The present list includes 32 species arranged according to Munroe (1983) with recent additions and generic assignments in accordance with Buszko (1979) and Prola & Racheli (1984).

Information on hosts in Florida and outside Florida is included under the heading “Larval hosts”. Each host species is followed by its common name(s) and a literature citation or place of specimen depository. Where no citation is given, the moth species was either reared or collected by the authors on the host listed. Synonyms of host species are included in parentheses if they appear on specimen labels or in the references cited. Museum abbreviations are USNM, United States National Museum, Washington, D. C.; MCZ, Museum of Comparative Zoology, Cambridge, Mass.; FSAC, Florida State Collection of Arthropods, Gainesville, Fla.; CMNH, Carnegie Museum of Natural History, Pittsburgh, Pa. Specimens from other museum collections were examined in addition to many private collections (see acknowledgments). Aspects of the biology of each species are included under the heading “Notes”.

Four species, Exestalis sp., Oidaematophorus sp. A, B, and C are unnamed, new to the North American fauna, and may be undescribed. Pending examination of additional material these species will be treated accordingly in future publications. Species accounts including life histories, distributions, adult and larval descriptions, and keys to Florida species are described and figured in Matthews (1989).
<table>
<thead>
<tr>
<th>Kimball #</th>
<th>Kimball species name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>6459</td>
<td><em>Trichoptilus parvulus</em></td>
<td>Current genus is <em>Megalorhipida</em>.</td>
</tr>
<tr>
<td>6460</td>
<td><em>Trichoptilus defecalis</em></td>
<td></td>
</tr>
<tr>
<td>6461</td>
<td><em>Trichoptilus californicus</em></td>
<td></td>
</tr>
<tr>
<td>6471</td>
<td><em>Platyptilia pusilidactyla</em></td>
<td>Current genus is <em>Lantanophaga</em>. Species record based on earlyliterature record. No specimens in museum collections examined. Figure in original description very close to <em>M. taprobanes</em>, probably a synonym.</td>
</tr>
<tr>
<td>6472,1</td>
<td><em>Platyptilia brevipennis</em></td>
<td></td>
</tr>
<tr>
<td>6483</td>
<td><em>Platyptilia brachymorpha</em></td>
<td>Both <em>brachymorpha</em> Meyrick and <em>crenulata</em> B &amp; McD. are synonyms of<em>Mariana taprobanes</em>.</td>
</tr>
<tr>
<td>6483,1</td>
<td><em>Platyptilia taprobanes</em></td>
<td>Current genus is <em>Mariana</em>.</td>
</tr>
<tr>
<td>6488</td>
<td><em>Platyptilia carolina</em></td>
<td>Current genus is <em>Stenoptilodes</em>.</td>
</tr>
<tr>
<td>6490</td>
<td><em>Platyptilia edwardsii</em></td>
<td>Northern species, found principally in Canada. Kimball’s specimen inMCZ labelled as this species are actually <em>M. taprobanes</em>.</td>
</tr>
<tr>
<td>6503</td>
<td><em>Exelastis cervinicolor</em></td>
<td></td>
</tr>
<tr>
<td>6504</td>
<td><em>Marasmarcha plumilio</em></td>
<td></td>
</tr>
<tr>
<td>6505</td>
<td><em>Stenoptilis rhynchostiae</em></td>
<td></td>
</tr>
<tr>
<td>6506</td>
<td><em>Stenoptilis parvus</em></td>
<td>Current name is <em>Liriptilodes parvus</em>.</td>
</tr>
<tr>
<td>6508</td>
<td><em>Stenoptilis zophodactyla</em></td>
<td>The USNM specimen Kimball reported was identified as <em>S. pallistriaga</em>.</td>
</tr>
<tr>
<td>6509</td>
<td><em>Stenoptilis pallistriaga</em></td>
<td></td>
</tr>
<tr>
<td>6516</td>
<td><em>Pselaphorus belfragei</em></td>
<td></td>
</tr>
<tr>
<td>6517</td>
<td><em>Adaina bipunctata</em></td>
<td></td>
</tr>
<tr>
<td>6521</td>
<td><em>Adaina buscki</em></td>
<td></td>
</tr>
<tr>
<td>6522</td>
<td><em>Adaina ambrosiae</em></td>
<td></td>
</tr>
<tr>
<td>6546</td>
<td><em>Oidaemathophorus inquinatus</em></td>
<td>Included in present checklist as <em>Oidaemathophorus</em> sp. A. The 3 specimens listed in Kimball from Univ. Michigan collection were examined and found to be <em>O. paleaceus</em>.</td>
</tr>
<tr>
<td>6554,1</td>
<td><em>Oidaemathophorus sp.</em></td>
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</tr>
<tr>
<td>6554,2</td>
<td><em>Oidaemathophorus stramineus</em></td>
<td></td>
</tr>
<tr>
<td>6563</td>
<td><em>Oidaemathophorus stramineus</em></td>
<td></td>
</tr>
<tr>
<td>6566</td>
<td><em>Oidaemathophorus venuspunctatus</em></td>
<td>Kimball’s specimens were identified as <em>Oidaemathophorus</em> sp. B.</td>
</tr>
<tr>
<td>6568</td>
<td><em>Oidaemathophorus lacteodactylus</em></td>
<td>Form <em>kellicottii</em> is now separate species.</td>
</tr>
<tr>
<td>6569</td>
<td><em>Oidaemathophorus balanotes</em></td>
<td></td>
</tr>
<tr>
<td>6581</td>
<td><em>Oidaemathophorus unicorlor</em></td>
<td></td>
</tr>
<tr>
<td>6588</td>
<td><em>Oidaemathophorus monodactylus</em></td>
<td>Current name is <em>Emmelina monodactyla</em>.</td>
</tr>
</tbody>
</table>

There is little doubt that more species will be discovered in the state. Many larvae feed only on very young foliage or flowers, so the seasonal occurrence of several plume moths is closely correlated with the flowering phenologies of their hosts. Because some
of the hosts flower for only short periods and are restricted to specific habitats, they can be easily missed by the general collector. New species may also become established as the result of agricultural importations. For example, *Amblyptilia pica* (Wlsm.) has been intercepted at Florida ports on cultivated *Geranium* (FSCA records, see also Valley et al., 1981). Much more still needs to be done in the Florida Keys, northern Florida, and especially in the Florida panhandle where typically northern species may be found as relict populations of the Appalachian fauna.

**Subfamily Platypilinae**

**Genus Sphenarches Meyrick**

1. *S. anisodactylus* (Walker)


   Notes: The life history of this species in Florida is described by Cassani et al. (1990). Larvae feed primarily on the flowers of the hosts.

**Genus Trichoptilus Walsingham**

2. *T. parvulus* Barnes & Lindsey


   Notes: Larvae feed on glandular trichomes, leaves, and flowers of the host. Larval behavior is described by Eisner & Shepherd (1965). Larvae in Florida are heavily infected by a species of *Cotesia* (Ichneumonidae).

3. *T. californicus* (Walsingham)


   Notes: Life history in California is described by Lange (1989).

4. *T. pygmaeus* Walsingham


   Notes: Larvae feed on young leaves and the bracts of unopened flowers of *Chrysopsis*.

**Genus Megalarhipida Amsel**

5. *M. defectalis* (Walker)


   Notes: On *Boerhavia*, larvae feed on flower buds and bore into the fruits. Larvae on *Okenia* feed only on leaves. In Florida, *O. hypogaea* is an endangered species restricted to a few locations on the southeast coast of Florida (Ward 1979).
Genus Platyptilia Hübner

6. *P. carduidactyla* (Riley)
   Notes: This species is known in Florida from two specimens, one collected at the Archbold Biological Station by H. V. Weems, 26-IX-1978, the other by H. O. Hilton in Ocean City Florida, 22-X-1961.

Genus Lantanophaga Zimmerman

7. *L. pusillidactyla* (Walker)
   Larval hosts: Florida, *Lantana camara* L. (lantana) [Verbenaceae], *Caperonia* sp. [Euphorbiaceae] (Kimball 1965), also reared from the seed heads of *Lippia* (= *Phyla*) *lanceolata* Michx. (northern frogfruit) [Verbenaceae] by C. E. Stegmaier (MCZ). The latter host species was probably *Phyla nodiflora* (L.) Green (match-head) since *lanceolata* does not occur in Florida. Outside Florida, *Lantana camara* L.
   Notes: Larvae feed on flowers and fruits of the hosts.

Genus Lioptilodes Zimmerman

8. *L. parvus* (Walsingham)
   Notes: Larvae feed inside flower heads, ova are usually deposited on flower bracts.

Genus Mariana Tutt

9. *M. taprobanes* (Felder & Rogenhofer)
   Larval hosts: Florida, C. E. Stegmaier reared this species on *sweet broom*, *Scoparia dulcis* L. [Scrophulariaceae] (MCZ) and collected a larva on *Mercardoniam acaimata* [Scrophulariaceae] (USNM), a specimen collected by P. Perun was reared on *Hydrolea quadralvis* Walt. [Hydrophyllaceae]; outside Florida, *Oenothera* sp. (buck) and *Plectranthus* sp. [both Lamiaceae], *Antirrhinum majus* L. (snapdragons) [Scrophulariaceae] (Zimmerman 1958), in fruits of *Limnophila heterophylla* Dehd., in seeds of *Penstemon* sp., and unripe fruits of *Veronica anagallis-aquatica* L. (cited as *V. anagallis* L.), *Verbascum coronandum* (Vahl) O. Kuntze, (Celisia coromandeliana Vahl) [all Scrophulariaceae] (Lange 1950), *Russelia equisitiformis* Schlecht. & Cham. (firecracker plant) [Scrophulariaceae] (USNM).
   Notes: *Mariana taprobanes* was reported by Kimball (1965) from *Lippia* (= *Phyla*) *lanceolata* Michx. (northern frogfruit) but these are *Lantanophaga pusillidactyla*, based on examination of the genitalia of these specimens in the MCZ.
Genus *Stenoptilodes* Zimmerman

10. *S. carolina* (Kearfott)
   Larval hosts: unknown.
   Notes: This species is included with some reservation since no specimens from Florida were examined. Kimball (1965) reported two specimens from Escambia county.

11. *S. auriga* (Barnes & Lindsey)
   Larval hosts: Florida, unknown; outside Florida: *Gerardia* sp. [Scrophulariaceae] and various species of Asteraceae (Neunzig 1987).
   Notes: The only specimen known from Florida, a male, was collected 29-III-1980 at Torreya state park by Charlie Stevens.

Genus *Stenoptilia* Hübner

12. *S. pallistriga* Barnes & McDunnough
   Larval hosts: unknown.

13. *S. rhynchosia* (Dyar)
   Larval hosts: Florida, *Rhyncosia cinerea* Nash (ashy rhyncosia) [Fabaceae]; outside Florida, none reported.
   Notes: Larvae feed on young leaves and shoots.

Genus *Exelastis* Meyrick

14. *E. cervinicolor* (Barnes & McDunnough)
   Larval hosts: unknown.

15. *Exelastis* sp.
   Larval hosts: unknown.
   Notes: This species is known from Florida by a series of specimens collected 11-III-1986 on Key Largo by Linwood C. Dow.

Genus *Murusmarchu* Meyrick

16. *M. pemilio* (Zeller)
   Notes: Some larvae feed exclusively on flowers while other individuals skeletonize young leaves and shoots. Barnes & Lindsey (1921) report, with skepticism, a record for *Ambrosia artemisiifolia* L. (common ragweed) [Asteraceae] which was also cited by Kimball (1965). This host is unlikely since members of this genus are chiefly legume feeders.

Subfamily Pterophoridae

Genus *Pselnophorus* Wallengren

17. *P. belfragei* (Fish)
   Larval hosts: Florida, no larvae have been field collected but several have been successfully reared from eggs on *Dichondra caroliniensis* Michx. (pony-foot) [Convolvulaceae]; outside Florida, none reported.
   Notes: This species is the most commonly encountered plume moth in Florida.
18. *A. bipunctata* (Moeschler)


Notes: Larvae feed within the composite flower heads.

19. *A. buscki* Barnes & Lindsey

Larval hosts: Florida, *Ipomoea indica* (Burm.f.) Merr. (blue morning-glory) [Convolvulaceae]; outside Florida, unknown.

Notes: Larvae skeletonize young leaves.

20. *A. ambrosiae* (Murtfeldt)


Notes: Larvae skeletonize leaves, and when not feeding rest along the midrib of the upper leaf surface in shallow, elongated depressions which they carve into the leaves and to which they repeatedly return after feeding bouts.

### Genus Oidaematophorus Wallengren

21. *O. eupatoriiv* (Fernald)


Notes: Larvae feed externally and are gregarious, feeding on and tying together the terminal shoots of the host with webbing (Barnes & Lindsey 1921). This species is known from Florida by three specimens collected 17-V-1970 at Torreya State Park by H. V. Weems (FSCA).

22. *O. inquinatus* Zeller


Notes: Larvae feed externally on young foliage.

23. *O. paleaceus* (Zeller)

Larval hosts: Florida, *Vernonia gigantea* (Walt.) Trel. ex Branner & Coville (ironweed) [Asteraceae]; outside Florida, *V. noveboracensis* (Barnes & Lindsey 1921) and *V. missurica* (Godfrey et al. 1987).

Notes: Larvae feed on young foliage.

24. *O. balanotes* (Meyrick)

Larval hosts: Florida, *Baccharis halimifolia* L. (saltbush, sea myrtle, or groundsel bush) [Asteraceae]; outside Florida, same species.

Notes: First instar larvae are leafminers while older larvae bore into the stems and form extensive galleries in the larger branches of the host. There are records of this species on *Myrica* sp. (wax myrtle) [Myricaceae] (USNM),
however, we feel these are most likely misidentified *Baccharis*. Both plants frequently occur in the same habitats and to an untrained eye are superficially quite similar.

25. *O. kelleiottii* (Fish)
   
   
   Notes: Larvae are stemborers.

26. *O. lacteodactylus* (Chambers)
   
   Larval hosts: Florida, unknown; outside Florida, *Solidago* sp. (USNM), *Eupatorium perfoliatum* L. (boneset) (Godfrey et al. 1987) [both Asteraceae].
   
   Notes: Larvae are stemborers. Kimball (1965) reported this species from *Baccharis halimifolia* L. However, numerous FSCA larval specimens labelled as *O. lacteodactylus* from *B. halimifolia* were examined and determined to be young larvae of *O. balanotes*.

27. *O. glenni* Cashatt
   
   Larval hosts: Florida, unknown; outside Florida *Solidago canadensis* L. (Canada goldenrod) [Asteraceae] (Cashatt 1972).
   
   Notes: Larvae are stemborers. This species is recorded in Florida from two specimens, one from St. Lucie county, the other from Walton county (CMNH).

28. *O. unicolor* (Barnes & McDunnough)
   
   
   Notes: Larvae are borers in the stems and roots of the host.

29. *Oideaematophorus* sp. A
   
   Larval hosts: Florida, *Eupatorium capillifolium* (Lem.) Small (dog fennel), and *E. compositifolium* Walt. (dog fennel) [Asteraceae]; outside Florida; unknown.
   
   Notes: Larvae feed externally on the host.

30. *Oideaematophorus* sp. B
   
   Larval hosts: Florida, *Haplopappus divaricatus* (Nutt.) A. Gray (scratch daisy) and *Conyza canadensis* (L.) Cronq. (horseweed) [both Asteraceae]; outside Florida, unknown.
   
   Notes: Kimball (1965) identified specimens of this species as *O. venapunctatus* which is similar in maculation. The genitalia of Kimball’s specimens (MCZ) were compared with paratypes of *venapunctatus* and are distinctly different. Larvae are stemborers and are commonly attacked by a braconid wasp, *Bracon* sp.

31. *Oideaematophorus* sp. C
   
   Larval hosts: unknown.
   
   Notes: Adults of this species are similar in size and maculation to *Adaina ambrasi*ae. The male genitalia are typical of *Oideaematophorus*. This species is known from specimens collected on Big Pine Key by M. Hennessey.

   Genus *Emmelina* Tutt

32. *E. monodactyla* (Linnaeus)
   
(sweet potato), *I. hispida* Parodi [all Convulvulaceae], *Hyoscyamus niger* L. (henbane), *Datura stramonium* L. (jimson weed) [both Solanaceae] (Parrella & Kok 1978), *Ipomoea purpurea* (L.) Roth (tall morning-glory) [Convulvulaceae] (Godfrey et al. 1978), *Chenopodium* sp. and *Atriplex* sp. [Chenopodiacea] (Buszko 1979).

Notes: On Convulvulaceae hosts, early instar larvae feed on terminal shoots while older larvae tunnel into flowers and feed on the reproductive structures within.

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