A CATALOGUE OF THE LARVAEVIDAE
OF FLORIDA

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The Larvaevidae (Tachinidae), or parasitic flies, comprise a large and
cosmopolitan family. It consists of some 300 genera and 5000 species, of
which 100 genera and 1500 species occur in North America (Essig, 1942).
The Florida species range in size from tiny three millimeter Chaetostigmoptera crassinervis (Walton) to the large spiny Juriniopsis adusta (Wulp)
which is 18 millimeters in length.

Adult Larvaevidae are nectar feeders, and some have been reported
attracted to honeydew secretions of other insects. Some plants that have
a decidedly offensive odor to man are attractive to them.

The larvae typically are parasitic within the bodies of other insects. One
has been reported from a sowbug, a terrestrial crustacean, and a few have
been recorded from other arthropods. The greatest number of species para-
sitize larvae and pupae of the Lepidoptera. Certain members of other or-
ders, including Coleoptera, Orthoptera, Hemiptera, Dermaptera, Hymenop-
tera and Diptera, are parasitized to a much lesser extent.

PHYLOGENETIC POSITION

The taxonomic position of the Larvaevidae is usually given as being near the Sarcophagidae, to which they are related. Various authors have
placed this family either in the superfamily Oestroidea or Muscoriidae, or
have grouped it along with the Hypodermatidae, Oestrildae, Cuterebridae,
Calliphoridae and Sarcoplaegadidae in the superfamily Tachinoida (Ender-
lein, 1936).

The group, or restricted parts of it, has had several family names, in-
cluding Tachniidae, Echinomyiidae, Phasiidae, and Megaprosopidae. The
name used in this paper is the one in current usage.

REARING PROCEDURES

It was necessary to rear host insects in the laboratory to secure host
records. Whenever a certain host species became prevalent, 25 to 100
larvae were collected. Mature larvae were selected for rearing as many
species are not parasitized until their last instar. Also, this materially cut
down the labor of feeding and caring for them. The caterpillars or other
host insects were hand-picked and placed in a large paper bag with a quan-
tity of their host plant, and the top of the bag was twisted tightly. These
containers make light, easily handled transportation cases.

Transference to rearing jars was done immediately after each collecting
trip. Rearing containers consisted of two screened cages and wide-mouthed,
gallon jars for the larger operations, and pint jars for individual rearing.

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1 Based, in part, on a thesis submitted as partial fulfillment of the re-
quirements for the degree of Master of Science.

2 Present address, 705 Cherry St., College Station, Texas.
The plant material was washed if dusty or dry. Cotton batting was wrapped around the ends of the stems, which were then placed in a small jar of water. After the rearing container was filled to a depth of two or three inches with clean, fresh, moist sand, the food material in its container was firmly embedded in the sand. Then the larvae were introduced. Finally, about two thicknesses of cheesecloth were tied over the mouth of the jar and a label with all collection data was attached.

After the initial setting up of the rearing jars, fresh water was added to the plant material daily. As most of the larvae had voracious appetites, it was necessary to gather fresh food every other day.

At intervals of three to five days, all plant refuse and fecal pellets were removed, or the larvae were moved to clean cages. After all the larvae had entered the ground or had spun cocoons, all plant material was removed. A twisted paper towel or other vertical support was placed in the cage to provide a resting place for adult hosts and parasites. Larvaeorididae, like the Lepidoptera, must assume a vertical position to expand their wings. In order to allow them time to dry and harden, the flies were killed in late afternoon of the same day they emerged.

After the adults hosts and parasites stopped emerging, the sand was sieved. Any remaining pupae were cleaned with a camel’s hair brush and transferred to clean sand or vermiculite for storage.

**Collecting and Preserving Procedures**

Since adult larvaeorididae are nectar feeders, the most profitable collecting sites are areas of blooming shrubs and flowers. *Viburnum, Melilotus alba* and butterfly bush in spring, and *Solidago sp., Bidens pilosa* and *Polygonum hydropiperoides* in fall yielded the greatest variety of specimens. Midmorning is the most favorable time for collection. The orange, parasites of nocturnal Orthoptera, are often taken at lights. Ultraviolet light promises to be a good method of collecting seldom seen species which are not attracted to incandescent or neon lights.

Adults were killed in a chloroform tube and pinned immediately if possible. When there were reared specimens that could definitely be associated with a puparium, this was pinned in a capsule beneath the adult which emerged from it. In mass rearings, puparia were preserved in alcohol.

In order to study details of larval mouth hooks, cuticle and spiracles, it was necessary to mount them on slides. The procedure, modified from Dr. A. N. Tissot’s aphid-mounting technique, is as follows:

Prick larva in several places near anterior end. Partially sever last segment from body. Place in five percent, cold potassium hydroxide overnight or in hot solution for twenty to thirty minutes. Using a blunt instrument remove body contents by pressing gently from anterior to posterior end. Wash in water by alternately pressing and releasing integument. Transfer to the following solutions in order, allowing the larval skin to remain in each about thirty minutes.

- Acetic alcohol (10% acetic acid in distilled water and 95% alcohol 1 to 1)
- 70% alcohol
- 95% alcohol
- 95% alcohol, clove oil 5 to 1
- 98% alcohol, clove oil 1 to 1
- Pure clove oil
Place a drop of Canada balsam on slide. Arrange the larva in balsam on the slide, turning the last segment spiracles up, the skin flattened and mouth hooks protruding or extracted. Apply glass cover slip. After several days, when the slides are dry, labels can be affixed.

**Florida Larvaeorididae**

Previous contributions to a knowledge of Florida Larvaeorididae include the study of specimens collected by Mrs. A. T. Slosson, mostly from the Biscayne Bay area. C. W. Johnson's two lists in 1895 and 1913 cited many records of Larvaeorididae. H. L. Dozier's ecological study in 1920 added more host records.

The following list alphabetically lists records of over 200 species of Larvaeorididae from Florida. These records include specimens from my own collection, and the collections of the Entomology Departments of the Florida Agricultural Experiment Station, the State Plant Board of Florida, and the University of Florida College of Agriculture. Published records from the literature are also included.

Records from sources other than my own are quoted in original form and content, except that the most recent name of the parasite has been cited.

Information under each species is as complete as possible, giving in order locality, date, collector, catalog number, and host. Records from the literature follow the same order, with the author and literature citation last.

Footnotes followed by the initials C.W.S. are comments by C. W. Sabrosky, mostly from personal correspondence. Notes and comments in brackets are my own.

Unless otherwise indicated specimens from the above named collections were identified by C. W. Sabrosky.

**Abbreviations**

The following abbreviations are used in the catalog.

- U.V.—ultraviolet
- P.—C. N. Patton catalog numbers
- AES—Entomology Department, Florida Agricultural Experiment Station
- SPB—Entomology Department, State Plant Board of Florida
- CED—Entomology Department, College of Agriculture, University of Florida

**Achaetoneura Brauer and Bergenstamm**

*A. aletiae* (Riley)

Gainesville, Fla., 10/12/53 to 10/30/53, C. N. Patton, P-200B. Thirteen specimens reared from cage of *50 Estigmene acrea* (Drury) larvae.


Gainesville, Fla., 4/10/54, C. N. Patton, P-220A. Six flies reared from 500 larvae or pupae of *Malacosoma americana* (F.).


?Gainesville, Fla., 8/26/30, AES 7242. Reared from the Bella moth. [*Utethesia bella* (L.)]


Gainesville, Fla., 11/24/34, W. P. Hunter. Reared from larvae of Urbanus proteinus L.


A. sp., probably archippivora (Williston)

Clearwater, Fla., 6/1/53, L. S. Maxwell, AES 10245B. Reared from larvae or pupae of Laphygma frugiperda (A. & S.) on St. Augustine grass.

A. sp. nr. euculliae Webber


A. frenchii (Williston) complex


Oleno State Park, Fla., 9/8/55, C. N. Patton, P-257. Parasites of Datana ministra (Drury), two lots collected on Hercia tomentosa on 8/14/55.

A. sp. nr. laniferae Webber

Eagle Lake, Fla., 10/30/48, Mrs. Maude Cowden, AES 9609. Parasites of Euphaedusoma involutum var. floridanum Grote. Two host larvae sent in on above date. One larva found dead 11/6/48, and two days later, two fly puparia were found in the soil. Flies emerged 11/17/48.

A. piperi Townsend


A. rileyi (Williston)


A. schizurae Townsend


Acroglossa Williston

A. hesperidarium Williston

Inverness, Fla., March 10, 22, Robertson. (Johnson, 1913 : 74).

Acrornaria Townsend

A. mirabilis Townsend

Palm Beach, Fla., Dyar. (Townsend, 1908 : 85, orig. desc.).

Acotia Robineau-Desvoidy

A. americana (Townsend)


Admontia Brauer and Bergenstamm

A. sp.

Alachua Co., Fla., 4/12/38, CED.

* "I believe that what has been called 'frenchii' may be a complex requiring further study."—C. W. S.
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Admontiopsis Townsend

*A. tarsalis* (Coquillet)

*Aphira* Robineau-Desvoidy

A. *ocypetala* Townsend
Florida, Mrs. Slosson. (Johnson, 1913: 72).

Archytas Jaenicker

*A. apicifer* (Walker)

A. *aerialis* (Robineau-Desvoidy)
Gainesville, Fla., 4/10/54, C. N. Patton, P-220. Ninety-seven flies reared from over 500 *Malacosoma americana* larvae, pupae. The parasite pupa was located in the anterior end of the host pupa. Adult flies emerged about 9 A.M., and were most active at night.

A. *convexifoceps* Brooks
Miami, Fla., Nov. 11-21, Townsend. (Brooks, 1949: 23, orig. desc.).

A. *lateralis* (Macquart)
Gainesville, Fla., 1940, Fogarty, AES. Ex *Malacosoma americana* F.

A. *marmorata* (Townsend)
Sabrosky (1955) refers published Florida records of *A. incerta* (Melgen) to this species, with which he synonymizes *A. ptiliventris* (Moignon), stating that *A. incerta* occurs only in South America.

A. *metallicus* (Robineau-Desvoidy)
Ocala National Forest, Fla., 10/24/54, C. N. Patton.
Otter Creek, Fla., 10/1/55, C. N. Patton, P-261C. On *Polygonum hydropiperoides*.

A. *refiventris* Curran
Sebring, Fla., 6/26/53, H. V. Weems.

Belvosia Robineau-Desvoidy

*B. bifasciata* (Fabricius)

*B. borealis* Aldrich

*B. slossonae* Coquillett
Otter Creek, Fla., 10/1/55, C. N. Patton, P-261D. On *Polygonum hydropiperoides*.

*B. townsendi* Aldrich
Otter Creek, Fla., 10/1/55, C. N. Patton, P-261A. On *Polygonum hydropiperoides*. 
Besokia Brauer and Bergenstamm

*B. aelops* (Walker)
Gainesville, Fla., 9/16/17, J. R. Watson, AES 1939.
Alachua Co., Fla., 10/20/40, CED.

*Diomyia Rondani*

*B. angustifrons* Reinhard

*B. aurigera* (Coquillett)

*B. georgiae* (Brauer and Bergenstamm)

*Blepharipeza Macquart*

*B. inermis* (Bigot)

*Bonnetia* Robineau-Desvoidy

*B. comta* (Fallen)
Leeburg, Fla., 4/19/42, AES 10485. Reared from a larva of *Feltia subterranea* (F.) which died 5/2/42. The next day, a fly puparium was found. Adult emerged 6/19/42. det. M. T. James, 1946.

*Buventes* Latrielle

*B. geniculata* (DeGeer)

*Corelia* Robineau-Desvoidy

*C. amplexus* (Coquillett)

*C. diacritecta* Sellers
Gainesville, Fla., 5/6/55, C. N. Patton, P-242B. One fly reared from larva of *Estigmene acrea* (Drury).

*C. flavirostris* (Van der Wulp)
Key West, Fla., 7/15/18, SPB. Ex *Megalopyge opercularis* (A. & S.). Adults emerged 9/11/21. [The lapse of three years is impossible; the adults undoubtedly emerged in 1918.]

*C. formosa* (Aldrich and Webber)

*C. lagaeae* (Townsend)

*C. redinata* (Aldrich and Webber)
Gainesville, Fla., 10/12/53 to 10/30/53, C. N. Patton, P-200A. Five adults reared from cage of 50 *Estigmene acrea* (Drury) larvae.
Gainesville, Fla., 1/7/54, C. N. Patton, P-213. Six parasites from a single larva of *Epantheria deflorata* F., pupated 12/23/53, emerged 1/7 to 1/10/54.

Gainesville, Fla., 10/27/54, C. N. Patton, P-231. Seven flies reared from a single larva of *Estigmene acrea* (Drury).

*C. sp.*

Gainesville, Fla., 11/6/38, AES 8314B. Parasites of hag-moth larvae or pupae. Of the 14 pupae, only one perfect adult emerged. [*Phoebetron puthaeum*?]

*Cenosphoma* Van der Wulp

Highlands Hammock State Park, Fla. 3/29/51, H. V. Weems.

*Ceracia* Rondani

*C. dentata* (Coquillett)


Biscayne Bay, Fla. (Johnson, 1913 : 73).

*C. (n. sp.?) near dentata* Coquillett


*Ceratomyiaella* Townsend

*C. angusticornis* (Townsend)

Inverness, Lake Worth, Mar. 3-19, Mrs. Slosson. (Johnson, 1913 : 73).


*Chaetogaedia* Brauer and Bergenstamm

*C. analis* (Van der Wulp)

Otter Creek, Fla., 10/1/55, C. N. Patton, P-261H. On *Polygonum hydropiperoides*.

Alachua Co., Fla., 3/15/35, CED.

*gen. sp. nr. Chaetogaedia*


*Chaetoglossa* Townsend

*C. niyripalus* Townsend

Inverness, Fla., Feb. 23, Robertson. (Townsend, 1892b : 126).

*C. picticornis* Townsend

South Florida, Feb. 16, Apr. 4, Robertson. (Townsend, 1892b : 126).

*C. violae* Townsend


*Florida.* (Johnson, 1913 : 72).

*Chaetophleps* Coquillett

*C. n. sp.*


*Chaetophleps* Townsend

*C. townsendi* (Smith)

Miami, Fla., Oct. 27, Townsend. [♀ holotype] and


"Poor condition, all wings broken, but apparently a new species. Very few records from cockroaches of any kind."—C. W. S.
Alachua Co., Fla., 11/7/38, H. Hixon.
1 spm.
3 spm.

Chaetostigmoptera Townsend

C. crassinevis (Walton)
1 spm.

Cholomyia Bigot

C. inequipes Bigot
3 spm.
5 spm.

Chrysotachina Brauer and Bergenstamm

C. alcedo (Loew)
Gainesville, Fla., 9/2/54, C. N. Patton, P-224. Six flies reared from be-
tween 30 and 40 larvae of Urbanus proteus L. Four more pupae
were attacked by a fungus and were discarded.
2 spm.

Cistogaster Latreille

C. immaculata Macquart
"This species ranges from Alberta to Quebec in Canada, Illinois to Texas
east to the Atlantic Coast in the United States." (Brooks, 1946 : 230). [Fattig also recorded it from Georgia.]

Cnephralomyia Townsend

C. floridana Townsend
Miami and White Springs, Fla., Oct.-Nov., 1908, Townsend. (Townsend,
1912 : 113. orig. desc.).

Copecyptra Townsend

C. rufescuda (Van der Wulp)
Lake Worth, Fla., Mrs. Slosson. (Johnson, 1913 : 74).

Cryptomeigenia Brauer and Bergenstamm

C. sp.
1 spm.

Cuphocera Macquart

C. kirakata (Townsend)

Cylindromyia Meigen

C. binotata (Bigot)

C. fumipennis (Bigot)
Otter Creek, Fla., 10/1/55, C. N. Patton, P-261N. On Polygonum hy-
dropiperoides.
Avon Park, Fla., 3/26/54, F. W. Mead, SPB.

Doryphorophaga Townsend

D. australis Reinhard
Gainesville, Fla., 6/30/37, CED. Ex potato beetle.

"Described from Ohio and Texas and recorded from Long Island,
N. Y."—C. W. S.
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*D. sedula* Reinhard  
1 spm.

*Epidexia Townsend*

*E. pulverea* (Coquillett)  
Florida. (Coquillett, 1897:115. orig. desc.) [as *Masicera*]

*E. (n. sp.)*  
Alachua Co., Fla., 10/31/?.

*Epidexiopsis Townsend*

*E. orbitalia* Townsend  

*Euantha Van der Wulp*

*E. liturata* (Olivier)  
Alachua Co., 1027, 1938, CED.  [This might mean 10/27/38].

*Eucelatoria Townsend*

*E. armigera* (Coquillett)  
Gainesville, Fla., 3/19/42, A. N. Tissot, AES 10492.  Reared from a  
larva of *Agrotis ipsilon* (Rothm.).  The larva died on 3/23 and two  
days later, two fly puparia were found.  Flies emerged 4/6 and  
4/7/42.  det. M. T. James, 1945.

*E. comosa* Van der Wulp  

*E. rubentis* (Coquillett)  
Gainesville, 9/1/55, C. N. Patton.
7 spm.

*E. sp.* (? dark *rubentis* Coq.)  
Gainesville, Fla., 3/20/55, C. N. Patton, P-236.  Two dozen larvae of  
*Pseudaelia unipuncta* (Haw.) collected on above date.  Flies  
emerged: 2 on 4/6/55, 1 on 4/7/55, 1 on 4/11/55.

*Eucordylygaster Townsend*

*E. minuscula* (Van der Wulp)  
Highlands Hammock State Park, Fla., 3/15/52, H. V. Weems.

*Euphasiopteryx Townsend*

*E. dominicana* (Townsend)  
Biscayne Bay, Fla., Mrs. Slosson; Hollywood, Fla., March 2, 1939, W.  

*E. ochracea* (Bigot)  
Gainesville, Fla., 9/17/38, K. J. Wilmot, AES 8343.  
Florida—Belleair, Ft. Drum, Ft. Myers, Hollywood, Morrison Field, and  

*Euthera Loew*

*E. tentatrix* Loew  
Worthington Springs, Fla., 7/18/47, P. W. Calhoun, AES 0811.  Reared  
from an adult bug—*Euschistus servus* Say, collected on cotton.  Fly  
emerged 7/21/47.
1 spm.
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Eutheresia Townsend

E. sp.

Eutrichopoda Townsend

E. abdominalis Townsend
Panama City, Fla. (Sabrosky, 1950: 336).

Exoptopus Van der Wulp

E. n. sp. nr. smithi (Van der Wulp) *

Esorista Meigen

E. mollis (Walker) (larvarum of American authors)
Gainesville, Fla., 5/22/55, C. N. Patton, P-244. Sixteen flies reared from the pupae of Estigmene acrea (Drury). One or two is the usual number from one host pupa, but I have seen three. Parasite larvae emerge from host pupae and pupate in soil.
Live Oak, Fla., 5/20/55, C. N. Patton, P-246. Fourteen flies emerged from cage of 33 Estigmene acrea (Drury) larvae and pupae.
Marianna, Fla., 5/19/51, W. W. Glenn, AES 9981. Two specimens reared from about 6 hosts—Apanteles phyllira Drury.
Caineville, Fla., 4/19/48, A. N. Tissot, AES 9981A. Reared from Estigmene acrea (Drury), larvae collected in lupine fields. [See AES 9488. Out of 6 parasitized larvae, 24 larvaevorids were reared, the above species and Gymnacarcia ricinorum (Tns.).]
Live Oak, Fla., 4/6/51, AES 9892. About 17 flies reared from larvae of Apanteles phyllira Drury. Only 1 moth obtained from some 20 larvae.

Frontiniella Townsend

F. parancilla Townsend
Crestview, Fla., 8/1/47, F. W. Barber, AES 9330. Reared from pupae of Tetralopha scortea (Led.). Fly puparia formed within pupae of the moths.

Gaediopsis Brauer and Bergenstamm

G. flavipes Coquillett
Otter Creek, Fla., 10/1/55, C. N. Patton, P-261K. On Polygonum hydropiperoides.

Genea Rondani

G. aurea James
Monticello, Fla., 7/26/14, A. I. Fabis. Bred from Tetralopha subcanalis Wlk. (James, 1943: 112. orig. desc.).

Gomionima Townsend

G. luteola (Coquillett)

Guerinia Robineau-Desvoidy

G. simulans (Meigen)
Gainesville, Fla., spring, 1954, C. N. Patton, P-233. Parasites of a small sawfly on Fraxinus sp. ["This is the species recorded as Nemoria Smithi in Johnson's 'Diptera of Florida' (1918). If one from Mexico is correct as Smithii, the Florida species is slightly different."—C. W. S.

*)
Gymnocarcelia Townsend

G. vicinorum Townsend
Gainesville, Fla., 10/12/53, C. N. Patton, P-200C. Eleven specimens reared from cage of 50 Estigmene acrea (Drury) larvae.
Gainesville, Fla., 11/22/53, C. N. Patton, P-201. Four parasite larvae emerged from a single isolated prepupa of E. acrea (Drury).
Live Oak, Fla., 5/17/55, J. E. Brogdon, P-245. Twenty-four flies reared from 39 larva of Estigmene acrea (Drury).

Gymnoerygia Townsend

G. rubra Townsend
Miami, Fla., 11/16/08, Mrs. Townsend. (Townsend, 1916a : 313. orig. desc.).

Houghia Coquillet

H. septipennis Coquillet

Juriniopsis Townsend

J. adusta (Van der Wulp)
Gainesville, Fla., 10/5/55, C. N. Patton, P-207. Three empty puparia found in larval skin of Eupantheria deflorata F.

J. floridensis Townsend
Sebring, Fla., 6/26/53, H. V. Weems.

Leschenaultia Robineau-Desvoidy

L. leucophrus (Wiedemann)
Gainesville, Fla., 3/31/38, A. N. Tissot, AES 8147A. Reared from larva of Estigmene acrea (Drury).
Gainesville, Fla., 4/27/44, AES 10231. Reared from larvae or pupae of Euchaetias egle Drury collected on climbing milkweed. det. GNP.

Leskiella James

L. brevirostris James
Florida. (James, 1943 : 97. orig. desc.).

Leskiomima Brauer and Bergenstamm

L. cinerea James
Alachua Co., Fla., 2/13/54, SPB.

L. tenera (Wiedemann)
Monticello, Fla., J. B. McGill. Reared from Acrobasis juglandis (LeB.) larvae. (James, 1943 : 102).

L. depilis (Coquillet)
Lake County, Fla., 11/1/53, SPB.

(To be Continued)