

THE ANT-LIONS OF FLORIDA. I. GENERA¹

(NEUROPTERA:MYRMELEONTIDAE)

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INTRODUCTION: Ant-lions are common, conspicuous insects in Florida. The pitfall traps made by Myrmeleon literally dot the land, especially in exposed sandy areas. Both adults and larvae are predators and are economically beneficial. Adults commonly feed on caterpillars and aphids, whereas the larvae feed on surface dwellers such as ants and larvae. Florida has the richest ant-lion fauna in the eastern United States with 22 species in 9 genera. Four species are found only in the Keys. This circular deals with the identification of the genera, most with only 1 species in Florida, based on adult characteristics.

IDENTIFICATION: Adult ant-lions are distinguished from all other insects by the 4 membraneous, similarly-shaped wings with a long hypostigmatic cell (fig. 1). Males of most species have a peculiar and unique organ at the base of the hindwing (pilula axillaris, fig. 1). The tube-like abdomen is similar in both sexes, although normally longer in the male, with the 1st sternite reduced (fig. 2). Male terminalia often have a postventral lobe (fig. 2), whereas the female terminalia are of more variable structure probably related to oviposition sites but usually with digging setae and a finger-like process (posterior gonapophysis, fig. 3, 13, 14). Adults are commonly confused with damselflies (Odonata), but the clavate antennae (fig. 18) of ant-lions easily distinguishes them.

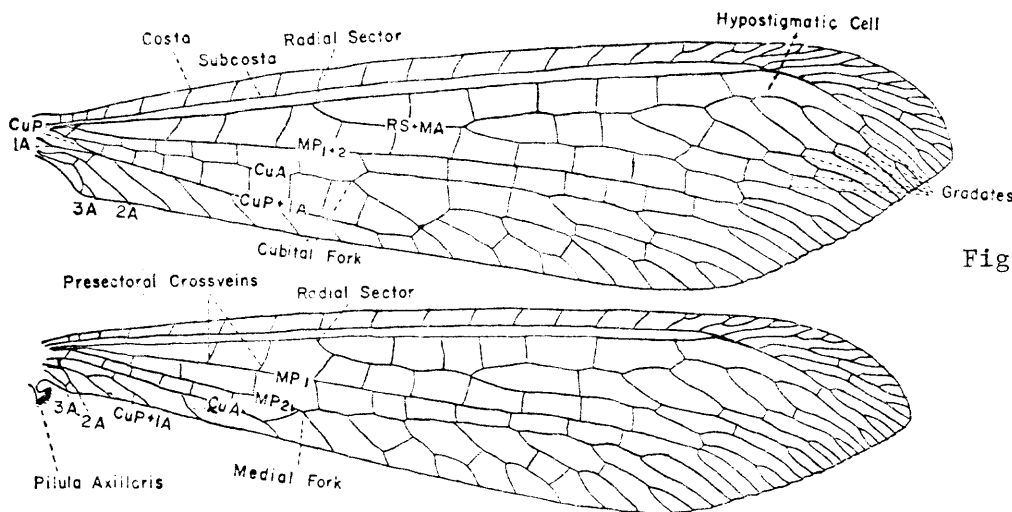


Fig. 1. Ant-lion wings.

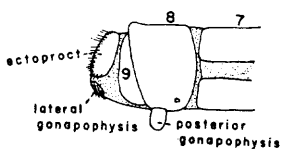


Fig. 3. Female terminalia

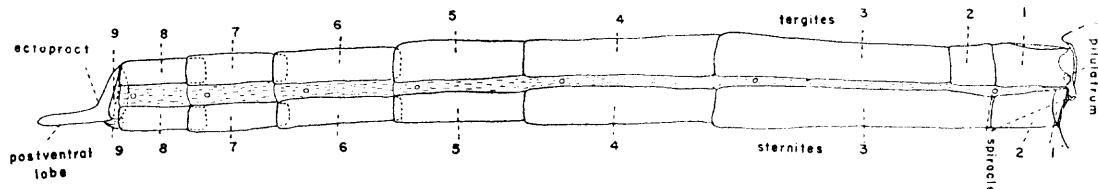


Fig. 2. Male abdomen

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KEY TO GENERA IN FLORIDA

- 1a. Distal palpomere of labius with sensory opening elongate, slit-like (fig. 4); male with eversible, long-haired sac between abdominal tergites VI and VII; pretarsal claws strongly arched near base (Subfamily Acanthaclisinae) 2

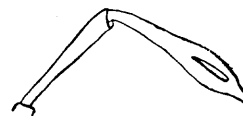


Fig. 4.

- 1b. Distal palpomere of labius with sensory opening small, oval-shaped (fig. 5); male without eversible sac; pretarsal claws nearly straight (Subfamily Myrmeleontinae) 3

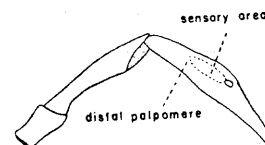


Fig. 5.

- 2a. Tibial spurs abruptly bent at right angle, bend preceded by flange (fig. 6) .. Paranthaclisis Banks

OBSERVATIONS: This Nearctic genus has 3 western species, one of which, Paranthaclisis hageni (Banks), occurs uncommonly in northern Florida. Larvae are found in sand dunes.

- 2b. Tibial spurs strongly bent but not right-angled, no flange present (fig. 7) Vella Navás

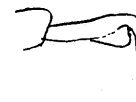


Fig. 6.

OBSERVATIONS: This genus has 5 species (mostly Neotropical). Vella americana (Drury) is found in Florida from Broward Co. to Escambia Co. This is the largest Florida ant-lion. Larvae are seen more often than adults since their conspicuous trough-like trails are evident, whereas adults are only occasionally found at lights. Larvae feed on other ant-lions and miscellaneous insects found on the sand.



Fig. 7.

- 3a. Vein 2A of forewing runs close to vein 1A for a short distance, then bends at sharp angle (fig. 8); 4

- 3b. Vein 2A of forewing runs in nearly even curve toward 3A (fig. 9) 6

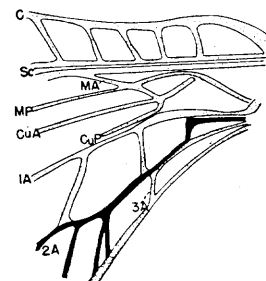


Fig. 8.

- 4a. Hindwing with 4 or more presectoral crossveins (fig. 10); male with pilula axillaris; distal tarsomere with setae on ventral surface much shorter than on preceding tarsomeres (Myrmeleontini) Myrmeleon Linnaeus

OBSERVATIONS: This is the only cosmopolitan genus in the family Myrmeleontidae. Six species are found in Florida. M. insertus Hagen is restricted to the Keys, whereas M. carolinus Banks, M. crudelis Walker, and M. mobilis Hagen are widespread on the mainland. M. heriocles Hagen and M. immaculatus DeGeer appear to be rare in northern Florida. Larvae are abundant forming pitfall traps, but the adults are less often seen since they seldom come to lights.

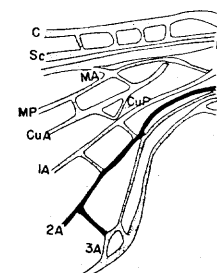


Fig. 9.

- 4b. Hindwing with 1 or 2 presectoral crossveins (fig. 11); male without pilula axillaris; distal tarsomere with ventral setae fully as long as on other tarsomeres (*Glenurini*) 5

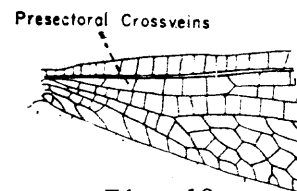


Fig. 10.

- 5a. Forewing and hindwing with predominant dark suffusion at apical 1/4 in marked contrast to basal 1/4 (fig. 12) *Glenurus* Hagen

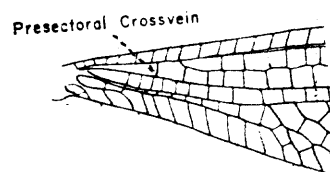


Fig. 11.

OBSERVATIONS: The only eastern species, *Glenurus gratus* (Say), is widespread in forested areas of Florida but not common since the larvae live in tree hollows.

- 5b. Wings not prominently suffused at apical 1/4 *Psammoleon* Banks

OBSERVATIONS: Four species are in Florida. *P. minor* Banks and *P. bistictus* (Hagen) are in the Keys, whereas *P. guttipes* Banks is found in central and northern Florida. Only 1 record of *P. decipiens* Banks from Florida (Orange Co.) is known. Larvae are found in sand around tree trunks.

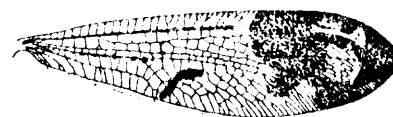


Fig. 12.

- 6a. Tibial spurs as long as forecoxa; female terminalia with anterior gonapophysis produced lobe-like (fig. 13); male ectoproct without postventral lobe (*Dendroleontini*) *Dendroleon* Brauer

OBSERVATIONS: This Holarctic genus is represented by *D. obsoletus* (Say). This rare species occurs from the Everglades to north Florida in forests since the trash bearing larvae are associated with logs.

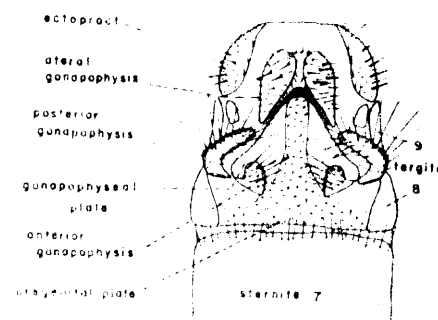


Fig. 13.

- 6b. Tibial spurs shorter than forecoxa; female terminalia with anterior gonapophysis plate-like (fig. 14); male ectoproct with postventral lobe (except *Chaetoleon*) (*Brachynemurini*) 7

- 7a. Hindwing with CuA running along posterior fork of MP2 for a long distance, interconnected by 4 or more crossveins (fig. 15); forefemur without knobbed setae *Brachynemurus* Hagen

OBSERVATIONS: Six species are in Florida. *B. abdominalis* (Say) is the most widespread U.S. antlion but is rare in Florida. The other 5 species form a special subgroup with ectoproct distinctly shaped (fig. 21); larvae are in sand and leave trails on the surface.

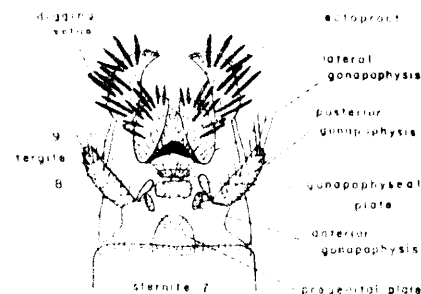


Fig. 14.

- 7b. Hindwing with CuA running to hind margin at or before medial fork (fig. 16); forefemur with knobbed setae (fig. 17) 8

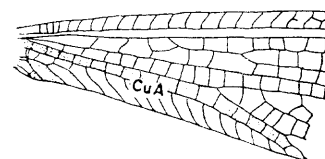


Fig. 15.

- 8a. Mesonotum with enlarged, blade-like setae, antennae with flagellomeres before club longer than wide

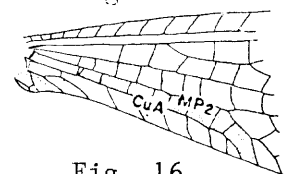


Fig. 16.

(fig. 18); male ectoproct without postventral lobe (fig. 19); female abdomen shorter than wings
 Chaetoleon Banks

OBSERVATIONS: C. pumilis (Burmeister) is a rare species in northern Florida. The larvae of the western counterpart live in sand around plants. The elongate antennae and legs are distinctive in the Brachynemurini.

- 8b. Mesonotum without blade-like setae; antenna with flagellomeres before club wider than long; male ectoproct with postventral lobe (fig. 20); female abdomen longer than wings Abatoleon Banks

OBSERVATIONS: A. indiges (Walker) is widespread in the West Indies and is established from Big Pine Key to Key West. The genus is Neotropical. Larva of this species are unknown.

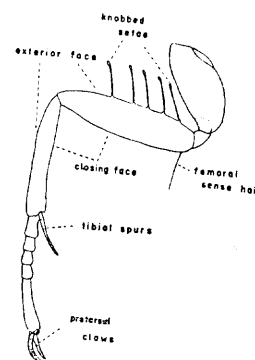


Fig. 17.

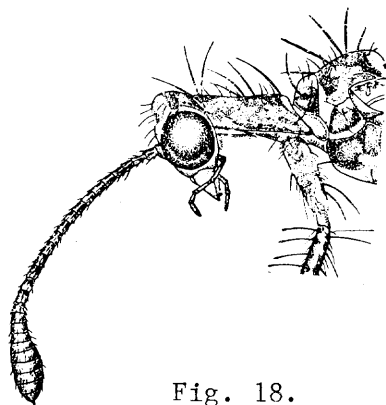


Fig. 18.

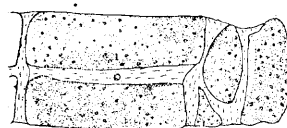


Fig. 19.



Fig. 20.

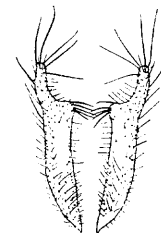


Fig. 21.

DETECTION AND SURVEY: Most of the adults are attracted to lights in the spring and summer. During the day adults rest on grass stems, twigs, rocks, and on bark. Larvae are found in sand, in tree hollows, on logs, and can be detected by trails on the surface of the sand or pitfall traps.

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