

The Dustywings of Florida. Part. 1. Genera<sup>1</sup>

(NEUROPTERA: CONIOPTERYGIDAE)

Lionel A. Stange<sup>2</sup>

**INTRODUCTION:** Dustywings are so called for the wax found on the wings and body which is unique in the order Neuroptera. These insects are the pygmies of the order, measuring about 2-4 mm in wing length. Formerly in taxonomic confusion and considered uncommon, they are now one of the better known groups taxonomically (Meinander 1972) and are one of the most common groups of Neuroptera. Dustywings are beneficial predators, and Muma (1967) considered them important biological control agents of whiteflies and citrus mites. There are about 300 described species in the world, and 5 of these in 3 genera are found in Florida.

**BIOLOGY:** Mating behavior has been observed in several species (Johnson and Morrison 1980). The male normally approaches the female from behind and pushes his head under her abdomen. He then grasps several of her legs with his forelegs and by extending his abdomen dorso-anteriorly affects copulation for about 12 minutes. According to Muma (1967), female Semidalis vicina deposit 2-5 single eggs per day for about a month. Eggs hatch within 7-20 days depending on temperature. There are 3 instars and a prepupa. Larvae take about 3 weeks to reach the pupal stage which lasts about 12 days and is enclosed in a double-layered white cocoon. One larva can consume 29-83 citrus red mite eggs, larvae, or nymphs per day. Adult feeding habits are poorly known, but some insect remains have been found in the gut indicating that adults eat insects. Adults live for about a month (Muma, 1967). They fly with a darting, fluttering pattern when disturbed and come to rest primarily on the lower surfaces of leaves. Repeated disturbances causes them to flutter, drop to the ground, and feign death. Adults normally fly at dusk, at night, and on overcast days. Meinander (1974) has provided the biology of a Florida species and a key to the genera based on larvae.

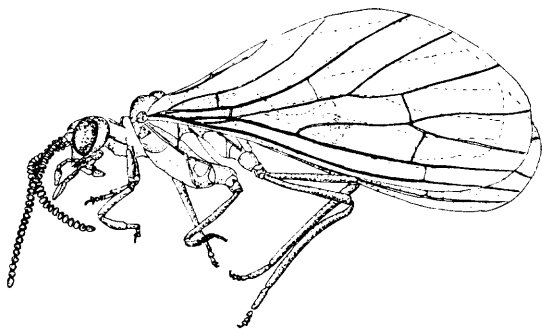


Fig. 1. Adult Coniopteryx  
(after Meinander 1972)

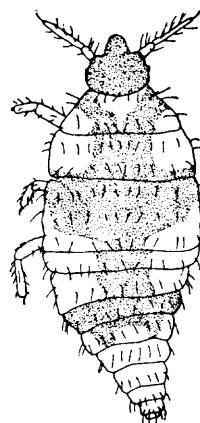


Fig. 2. Larval Semidalis vicina  
(after Meinander 1974)

<sup>1</sup>/ Contribution No. 531, Bureau of Entomology.

<sup>2</sup>/ Taxonomic Entomologist, Div. Plant Industry, P.O. Box 1269, Gainesville, Fl 32602.

DETECTION AND SURVEY: Adults often can be seen flying at dusk and look like oversized whiteflies. They are sometimes attracted to blacklight (Frost 1975). Adults can be startled to flight and then netted by beating bushes and trees. Larvae can be found on a beating sheet or by close inspection of plant material.

IDENTIFICATION: Ideally, part of the specimens should be point mounted and the rest placed in 75% isopropyl alcohol. Genera are readily separated by wing venation and species by male terminalia and head characters.

#### KEY TO THE GENERA OF ADULT CONIOPTERYGIDAE OF FLORIDA

1. Hindwing with vein M not forked (fig. 3)  
..... Coniopteryx Curtis

OBSERVATIONS: Three species are recorded from Florida. C. westwoodi (Fitch) is distinctive by having a large hook on the male frons which is absent in C. diversicornis Meinander and dorsicornis Johnson. These 2 species are distinguished in the male sex by the antennae which have scale-like setae on dorsicornis and simple setae on diversicornis.

- 1'. Hindwing with vein M forked (fig. 4, 5).....2

2. Forewing crossvein M-Cu<sub>1</sub> oblique, striking posterior branch of M (fig. 4).....

..... Semidalis Enderlein  
OBSERVATIONS: A Holarctic species, S. vicina (Westwood), is widespread in Florida. Muma (1967) and Meinander (1974) gave biological data.

- 2'. Forewing crossvein M-Cu<sub>1</sub> striking stem of M at right angle (fig. 5).....

..... Parasemidalis Enderlein  
OBSERVATIONS: A Holarctic species, P. fuscipennis (Reuter), is recorded from Highlands County. This species is associated with conifers and seems to be scarce.

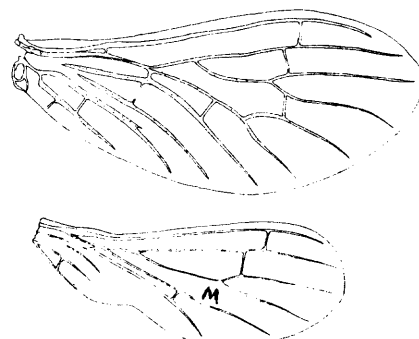


Fig. 3. (after Muma 1971)

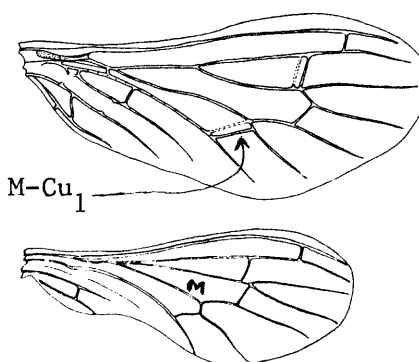


Fig. 4. (after Muma 1971)

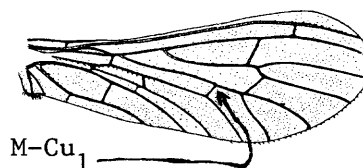


Fig. 5. (after Meinander 1972)

#### REFERENCES:

- Frost, S.W. 1975. Third supplement to insects taken in light traps at the Archbold Biological Station, Highlands County, Florida. Florida Ent. 58:35-42.  
Johnson, V. 1980. New species of Coniopterygidae from North America. Psyche 87:181-192.  
Johnson, V., and W. P. Morrison. 1980. Mating behavior of three species of Coniopterygidae (Neuroptera). Psyche 86:395-398.  
Meinander, M. 1972. A revision of the family Coniopterygidae (Planipennia). Acta Zool. Fennica 136:1-357.  
Meinander, M. 1974. The larvae of two North American species of Coniopterygidae (Neuroptera). Notulae Ent. 54:12-16.  
Muma, M. H. 1967. Biological notes on Coniopteryx vicina. Florida Ent. 50:285-293.  
Muma, M. H. 1971. Coniopterygids (Neuroptera) on Florida citrus trees. Florida Ent. 54:282-285.