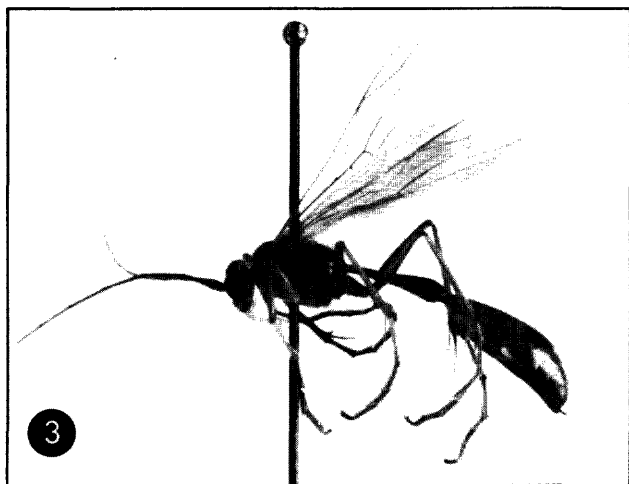


The Rhopalosomatidae of Florida (Hymenoptera)¹

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INTRODUCTION: The Rhopalosomatidae is a parasitic wasp family with only 34 described species in 4 genera in the world (Townes 1977). As far as is known, members of this family are external parasites of crickets (Gryllidae). Three species in 3 genera are found in Florida. *Olixon banksii* (Brues) is a brachypterous insect that runs around swiftly in leaf litter or on sand. The other 2 Floridian species are fully winged. The family itself is of uncertain phylogenetic position with the latest study (Brothers 1975) relating the group with the spider wasps (Pompilidae). This family of aculeate wasps can be recognized by the upcurved female sting, upcurved spine of the male clasper, mesopleuron lacking a median transverse groove, and the mesosternum with a pair of plates on its hind edge that partially covers the bases of the midcoxae. The femora and tibiae lack bristles, and the female tarsi are expanded. Also, the antennal flagellomeres have distinctive bristles on the apex of each segment (except *Olixon*).



Figures 1-3. 1) *Olixon banksii*. Fig. 2) *Liosphex varius*.
Fig. 3) *Rhopalosoma nearcticum*. Photographs: J. Lotz
(DPI Neg. #91013)

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Key to Florida Species

1. Brachypterous (Fig. 1); eye not emarginate on its mesal margin *Olixon banksii* (Brues)
- 1'. Fully winged; eye emarginate on its mesal margin 2
2. Occipital carina lacking; first abdominal tergite about 1.5 X as long as wide (fig. 2); distance from lateral ocellus to eye more than greatest ocellar diameter *Liosphex varius* Townes
- 2'. Occipital carina weak but present; first abdominal tergite 4.0-6.8 X as long as wide (Fig. 3); distance from lateral ocellus to eye less than greatest ocellar diameter *Rhopalosoma nearcticum* Brues

FLORIDA SPECIES AND RECORDS: (all in the Florida State Collection of Arthropods):

Olixon banksii Brues 1922. Recorded from Arkansas, District of Columbia, Florida, Georgia, Kansas, Louisiana, Maryland, New York, North Carolina, Ohio, Oklahoma, and Mexico. **FLORIDA RECORDS:** Alachua Co.: Gainesville (pitfall traps, V, VIII; Moericke trap, X); 2 miles N. Cross Creek (no date). Highlands Co.: Archbold Biological Station (Malaise trap, X). Leon Co.: Tall Timbers Research Station (pitfall traps, V-X).

A probable host for this small, brachypterous insect is the cricket *Nomerobius* (Townes 1977). *Olixon* individuals have been seen running swiftly in leaf litter or on sand.

Liosphex varius Townes 1977. This species ranges from southeastern United States to southern Brazil. Recorded from Florida and Louisiana in the U.S., Brazil, Ecuador, El Salvador, Mexico, and Peru. **FLORIDA RECORDS:** Alachua Co.: Gainesville, Beville Heights (Malaise trap, V-VI) (new county record). Leon Co.: Tall Timbers Research Station (Holotype, Malaise trap, VI).

Nothing is known of the biology of this insect. Oddly, the only other species of *Liosphex* is found in the Philippines.

Rhopalosoma nearcticum Brues 1943. Recorded from Florida, Georgia, Kentucky, Louisiana, Maryland, Missouri, North Carolina, South Carolina, Tennessee and Texas. **FLORIDA RECORDS:** Alachua Co.: Gainesville, Beville Heights (IX, X, light trap); Gainesville, Summer Creek (VI); Gainesville, Doyle Conner Building, (VIII); Montoca (V). Brevard Co.: Wilson (X). Dade Co.: Miami (III-VI). Gadsden Co.: Quincy (Malaise trap, VII). Hardee Co.: New Hope (Steiner trap, VII). Highlands Co.: Archbold (Malaise trap, V-IX); 5 miles S. Sebring (V). Hillsborough Co.: Balm (Steiner trap, VI). Indian River Co.: 5 miles S. Vero Beach (Malaise trap, VII). Levy Co.: "Mexican Fruitfly trap". Manatee Co.: Palmview (Fruitfly trap, VII). Marion Co.: Lake Eaton (Malaise trap, IX); 9 miles SSW Ocala (Malaise trap, VIII). Okaloosa Co.: 4.5 miles NW Holt (VIII). Orange Co.: "McPhail trap" (V). Putnam Co.: Interlachen (V). Volusia Co.: Orange City (VI).

This pale brown insect is relatively common in Florida judging from the FSCA collection of over 700 specimens. Most of these were collected in Malaise traps since the adults are nocturnal. Biological data were given for this species by Gurney (1953). *R. nearcticum* parasitizes crickets of the genera *Hapithus* and *Orotharis*. Parasitized crickets can be spotted by their crippled condition of holding one hindleg outward. The *Rhopalosoma* larva will be found adhering to the body above the hindfemur. Four larval molts remain on the host, then the fifth instar leaves the host and pupates in the soil. The cocoon remains in the soil overwinter and emerges as an adult the following summer.

LITERATURE CITED:

- Brothers, Denis J. 1975. Phylogeny and classification of the aculeate Hymenoptera; with special reference to Mutillidae. Univ. Kansas Science Bull. 50:483-648.
- Brues, Charles T. 1943. The American species of *Rhopalosoma*. Ann. Ent. Soc. America 36:310-318.
- Gurney, Ashley B. 1953. Notes on the biology and immature stages of a cricket parasite of the genus *Rhopalosoma*. Proc. U.S. National Museum 103:19-34.
- Townes, Henry. 1977. A revision of the Rhopalosomatidae (Hymenoptera). Contrib. Amer. Entomological Institute 15:1-34.