

Definition of Rhopalosomatidae (Insecta: Hymenoptera).

Carlos Henrique Marchiori¹

¹ Instituto Federal Goiano

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Co-authors: Marco Vinícios de Oliveira Santana² and Klebert de Paula Malheiros³.

²⁻³Instituto Marco Santana, Goiânia, Goiás, Brazil.

The Rhopalosomatidae, included in the superfamily Vespoidea, constitute a small family of stinging Hymenoptera. They are solitary wasps with a wide distribution, although they are absent from the Palearctic Region. These wasps are more abundant in tropical regions, but some species inhabit temperate zones (Figure 1) (Coronado, 2002; Engel, 2008; Bulbol, et al., 2021).



Figure 1. Adult female *Rhopalosoma nearcticum* Brues, 1943. attracted to a mercury-vapor lamp in Fairfax County, VA, USA on July 29, 2018. Source: Photo by Ashley Bradford initially posted on bugguide.net.

Very little is known about these insects. When the larvae were found, they were external ectoparasitoids of crickets. Since crickets are nocturnal and due to the large eyes and ocelli that these wasps often have, it is assumed that they are also nocturnal. *Rhopalosoma* Cresson, 1865, individuals have been seen flying in groups of up to 10. Individuals of *Olixon banksii* (Brues, 1922) have been seen running across the sand. Very little is known about these insects. When the larvae were found, they were external ectoparasitoids of crickets. Since crickets are nocturnal and due to the large eyes and

ocelli that these wasps often have, it is assumed that they are also nocturnal. *Rhopalosoma* individuals have been seen flying in groups of up to 10. Individuals of *Olixon banksii* (Brues, 1922) have been seen running across the sand (Figure 2) (Fernandes and Sarmiento, 2002; Gauld, 2006; Gess and Gess).



Figure 2. Life stages and representative specimens of *Rhopalosoma* Cresson, 1865 (A) 5th instar larva before burrowing (B) pupal case extracted from soil (C) adult after failing to emerge properly from cocoon (D) disarticulated mandible from the pupal case (E) pupal case extracted from dirt showing still living pre-pupa (F) pupal case awaiting adult emergence (G–I) early instar larvae attached to (G) *Hapithus agitator* Uhler, 1864 (Insecta: Orthoptera) adult (larva) and (H) *Hapithus saltator* (Uhler, 1864) nymph (larva) (I) *Anaxipha exigua* (Say, 1825) species group (inset: detached larva). Source: <https://jhr.pensoft.net/article/38276/>.

The habitat is generally described as dense, moist shrubby vegetation, such as that on riverbanks or sea coasts. Specimens are rare in collections because most species are nocturnal and crepuscular and are not collected from flowers like other wasps, except *Rhopalosoma nearcticum* Brues, 1943, which has a local distribution in the southeastern United States (Fernandes and Sarmiento, 2002; Gauld, 2006; Gess and Gess, 2014).

Very little is known about the reproductive aspects of this family; the larvae were described by Gurney in 1953. When the

larvae were found in this group, they were ectoparasites of crickets. Laterally on the abdomen, the larva forms a sac-like structure that helps feed the cricket by piercing it through the posterior end. When mature, the larva detaches and buries itself in the soil forming a brownish cocoon (Goulet and Humbert, 1993; Guidotti, 1993; 2007).

Regarding the number of genera and species, we highlight *Olixon* with 8 species found in Africa, North and South America, Australia, and India. *Liosphex* Townes, 1977, with 2 species in North America and Southeast Asia, *Rhopalosoma* with 17 species in the West Indies and North and South America, and *Paniscomima* Enderlein, 1904, with 10 species in Africa and Southeast Asia (Kraut, 2000; Krogamann, et al. 2009; Lohrmann et al., 2014). The crickets present in the aforementioned locations were mainly of the genera *Allonemobius* Hebard, 1913, and *Gryllus*, Linnaeus, 1758, with some of the genus *Eunemobius* Hebard, 1913 (Brothers and Finnamore, 1993; Lohrmann and Ohl, 2011; 2010; 2007; Raqmsdell and Tayler, 2006).

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