



Nota Científica

Distribution and host records of *Melittobia* (Hymenoptera: Eulophidae) from Mexico

Distribución y huéspedes de *Melittobia* (Hymenoptera: Eulophidae) en México

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Abstract. Specimens of a parasitoid wasp attacking pupae of *Anastrepha ludens* (Loew) in Mexico were identified as *Melittobia digitata* Dahms, and after a revision of several worldwide insect collections, *M. australica* Girault was also found to be present in Mexico. Distribution, diagnosis, hosts and collection locations are given for both species. The possibility that *M. acasta* (Walker) is also present in Mexico is discussed.

Key words: Eulophidae, *Melittobia australica*, *M. digitata*, *M. acasta*, *Anastrepha ludens*, Mexico, distribution.

Resumen. Se identificaron como *Melittobia digitata* Dahms ejemplares de un parasitoide atacando pupas de *Anastrepha ludens* (Loew) proveniente de México. Luego de revisar numerosas colecciones de insectos de diversas partes del mundo, pudimos encontrar también a *M. australica* (Girault) en el país. Se presenta la distribución, diagnosis, hospedadores y lugares en los cuales se han colectado ambas especies. Se discute la posibilidad que *M. acasta* (Walker) también se encuentre en el país.

Palabras clave: Eulophidae, *Melittobia australica*, *M. digitata*, *M. acasta*, *Anastrepha ludens*, México, distribución.

Melittobia Westwood, 1847 wasps are common gregarious ectoparasitoids of aculeate Hymenoptera, but also attack insects of at least 4 other orders (Dahms, 1984b; González and Matthews, 2002, 2005b; González et al., 2004b). They can become pests of bees, especially those manipulated for crop pollination (González et al., 2004b). It is a cosmopolitan genus with 13 described species (Dahms, 1984a). Eight species are reported from America (north of Mexico), according to the most recent checklist for the region (La Salle, 1993). Even though, González and Terán (1996), González and Matthews (2005a), González et al. (2004b) and De Santis (1949, 1957, 1967, 1979, 1981, 1983, 1989) list or mention the presence of some *Melittobia* species from various Latin American countries, until recently there was no record from Mexico. The first mention of *Melittobia* in Mexico (Ruiz-Cancino et al., 2004) lacks specific details, which is surprising given that the Chalcidoidea are one of the most important and best-studied wasp groups in the country

(González-Hernández, 2000).

We identify herein *Melittobia australica* Girault and *M. digitata* Dahms from various Mexican states. Specimens examined are deposited in the entomological collections of the University of Georgia (UGA), Texas A & M University (TAMU), the Australian National Insect Collection (ANIC), and the Entomology Research Museum of the University of California Riverside (UCR).

Melittobia australica Girault

Distribution: Baja California Sur, Hidalgo, Sinaloa.

Hosts: *Euodynerus hidalgo vierecki* (Cameron) (Vespidae), *Chrysis wasbaueri* Bohart, (Chrysididae); and *Sceliphron* sp. (Sphecidae).

Diagnosis: Females 1.1 – 1.3 mm long. Head, mesosoma, coxae, most of the femora, antennal flagellum dark brown. Pedicel paler than the flagellum but scape is paler than the pedicel. Remaining legs pale brown. Males 1.2 – 1.4 mm long. Honey colored. Head wider than long. Modified antennae with broad scape, expanded evenly towards its apex. A thorough diagnosis is presented by Dahms (1984a).

Material Examined: 26 ♀♀, Mexico, Baja California Sur, 17 km North of La Paz, 16 June 1991, Centro de Investigaciones Biológicas, Coll. M. L. Jiménez (ANIC); 1 ♀, same locality and collector, (an extra label reads) *Melittobia* sp. (*hawaiiensis* group) det. La Salle, 1992 (ANIC); 2 ♂♂, 45 ♀♀, 879 J29. emerged from trap nests. Ex. *Euodynerus vierecki* + *Chrysis wasbaueri*, Hidalgo (Mexico) (ANIC); 4 ♂♂, 12 ♀♀, Mexico, Sinaloa, 14 miles South of Los Mochis, 5 ii.1964, Coll. E. Schlinger, ex. *Sceliphron* larva (1 ♂, 1♀, of the series mounted in slides) (UCR).

Melittobia digitata Dahms

Distribution: Michoacán, Chiapas, Veracruz.

Hosts: *Anastrepha ludens* (Loew). This is the first record of any *Melittobia* species parasitizing fruit flies (*Anastrepha* spp.). It is possible that the *M. digitata* specimens were originally behaving as hyperparasitoids of other parasitic wasps attacking the fruit flies, but under laboratory conditions they find *A. ludens* to be a suitable host (M. Aluja, pers. comm.).

Diagnosis: Females 1.5 – 1.7 mm long. Head, mesosoma, coxae, antennal flagellum dark brown. Trochanter, most of the femora, and metasoma light brown. Scape, pedicel and remaining legs yellow. Males 1.2 – 1.4 mm long. Amber colored. Head, mesosoma, metasoma, and legs paler than the abdomen. Head as wide as long, vertex broadly rounded, genal margins almost straight. Modified antennae with a club-shape scape, with distal cup shape depression and a thumb-like projection on the side, opposite pedicel attachment. A more thorough diagnosis is presented by Dahms (1984a).

Material Examined: 25 ♀♀, Mexico, Chiapas, Soconusco, 1997, M. Aluja. Pupae SELIS Lot#0212778. Host: *Anastrepha ludens* (UGA); 20 ♀♀, Mexico, Michoacán, 2004, M. Aluja. Host: *Anastrepha ludens* (UGA); 50 ♀♀, Xalapa, Veracruz, Mexico, 2005, M. Aluja, Host: *Anastrepha ludens* (TAMU).

Both *M. australica* and *M. digitata* appear to be well established in Mexico, and further collecting will likely expand their known distributions. Although we have confirmed only the presence of *M. australica* and *M. digitata* in the country, it is possible that a third species, *M. acasta* (Walker), occurs there as well. Although *M. acasta* is recognized as the only European species of the genus, thanks probably to commerce, this species has become cosmopolitan (González et al., 2004a, 2004b). Established in USA, Cuba, and Venezuela (González and Terán, 1996; González et al., 2004a, 2004b), countries with which Mexico maintains surface and maritime trade, it will be of no surprise if *M. acasta* is found.

The addition of *A. ludens*, “the Mexican fruit fly”, as

a suitable laboratory host for *M. digitata* is notable and unexpected finding. However, further work is needed to clarify whether this host is attacked in the field. Various other Diptera are also recorded as suitable hosts for *Melittobia* (Dahms, 1984b; González et al., 2004b).

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