

SHORT COMMUNICATION

**New host association: *Polybia scutellaris* (Hymenoptera, Vespidae)
parasitized by *Melaloncha* (Diptera, Phoridae)**M. Ayelen Lutz¹ & Brian V. Brown²¹CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas), División Vertebrados del Museo de La Plata, Paseo del Bosque s/n (1900), La Plata, Argentina. ayelenlutz@gmail.com²Entomology Section, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA, 90007, USA. bbrown@nhm.org

ABSTRACT. New host association: *Polybia scutellaris* (Hymenoptera, Vespidae) parasitized by *Melaloncha* (Diptera, Phoridae). The genus *Melaloncha* Brues is a large assemblage of New World, parasitoid phorid flies. They are parasitoids of Apoidea bees. However, here we present the first record of a wasp parasitized by *Melaloncha* sp. The new host is *Polybia scutellaris* (White), a neotropical eusocial wasp. The parasitized wasp was found in an urban park near the city of La Plata, Buenos Aires, Argentina. It appears that the genus *Melaloncha* parasitizes a wider range of social Hymenoptera than currently known.

KEYWORDS. Insecta; Neotropical region; parasitoid flies; social insects; wasp.

Polybia scutellaris (White, 1841) is a eusocial wasp from South America, whose colonies can last 20 to 30 years (West-Eberhard *et al.* 2006). The nests are built with a mixture of saliva and fibers from rotten trunks, so they appear to be made of paper or cardboard (Bruch 1936; Telleria 1996). Nests are pendant, have a sheet that protects the combs, and the exterior is thick with stout spines (Wenzel 1998). It is supposed that the envelope of *Polybia* nests protect wasps and their brood from natural enemies (London & Jeanne 1998). *Polybia scutellaris* wasps are predators that hunt and store a large number of prey insects from different orders in their nests (Bruch 1936; West-Eberhard *et al.* 2006). They also collect pollen and nectar that is stored in their nests, so they produce honey (Telleria 1996). Studies on ecology of *P. scutellaris* are interesting because of their role as pollinators and for the possibility of their use in the biological control of agricultural pests (Bruch 1936; Moura *et al.* 2000; Torres *et al.* 2012). Little is known about *P. scutellaris* parasites, but in general *Polybia* colonies are attacked by gregarines and strepsipterans (Richards 1978; Kudô *et al.* 2004) and their nests can be invaded by mantispids, trigonalids, tachinids, and phorids (Richards 1978; London & Jeanne, 1998).

The genus *Melaloncha* Brues, 1904 is a large assemblage of New World, primarily tropical, parasitoid phorid flies. Until recently, they were a poorly known group of only 32 species, but revisionary work (Brown 2001; Brown 2004; Gonzalez & Brown 2004; Brown 2005; Brown & Kung 2006; Kung 2008; Brown 2009) has uncovered many more (now a total of 169 named species), and established many new host records. They are parasitoids of apid bees, especially Meliponini, but also

including *Apis mellifera* (Ronna 1936, 1937) and two species of *Bombus*, *B. mexicanus* (Ramírez 1982) and *B. atratus* (Lucía *et al.* 2013). Additionally, there is a record of an unidentified species reared from a nocturnal halictid bee (Wcislo *et al.* 2004). All of these records have justified the common name “bee-killing flies”. One of us, however, has discovered a new host association for the genus.

A specimen of *P. scutellaris* wasp was collected dead on 24 January 2011 at the *Parque Ecológico Municipal La Plata* (34°52'3.4"S; 58°04'26.2"W), an urban park located in the town of Villa Elisa, near the city of La Plata in Buenos Aires province, Argentina. Recently, we were studying the material collected at the park and we discovered that the mesosoma of the wasp had a puparium exposed. We dissected the mesosoma of the wasp using forceps and extracted a *Melaloncha* sp. puparium. The puparium was dissected out to examine the pharate adult. We could confirm that it belongs to the genus *Melaloncha*, but we were unable to assign a specific level because the adult was a male. Males of *Melaloncha* are difficult to identify, indeed revisions on the genus are based on females, which have diagnostic characters (Brown 2004; Gonzalez & Brown 2004). The material is deposited at the Colección de Entomología del Museo de La Plata, Argentina.

It is assumed that *Melaloncha* species attack social bees because is easier for the phorid to trace a prey near the colony (Ronna 1937), or find them in aggregations (Brown 2001), and here we show that a species of *Melaloncha* parasitized a social vespid. It appears that this phorid genus parasitizes a wider range of social Hymenoptera than currently known. But in this case there is something else; *P. scutellaris* hunts flies

(West-Eberhard *et al.* 2006) so this wasp could be at the same time prey and predator. Future studies on the ecology of these insects are necessary to understand their interactions.

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