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Danilo Ament, Gabriele Freiria, Léo Rocha-Filho, Marco Lama, Carlos Garófalo. A scientific note on the first records of Melaloncha Brues, 1904 (Diptera: Phoridae) parasitizing Euglossini and Centridini bees. *Apidologie*, 2014, 45 (2), pp.266-268. 10.1007/s13592-013-0246-1 . hal-01234723

HAL Id: hal-01234723

<https://hal.science/hal-01234723>

Submitted on 27 Nov 2015

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A scientific note on the first records of *Melaloncha* Brues, 1904 (Diptera: Phoridae) parasitizing Euglossini and Centridini bees

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Received 5 July 2013 – Revised 6 September 2013 – Accepted 23 September 2013

parasitism / phorid / immature

The phorid genus *Melaloncha* Brues, 1904, also known as bee-killing flies, actually comprises 167 species and can be found mostly in the Neotropical region (Brown 2009). Most of the *Melaloncha* are endoparasitoids of corbiculate, eusocial bees, as stingless bees (Meliponini), bumble bees (*Bombus* Latreille), and honey bees (*Apis mellifera* (Linnaeus)) (Ramírez 1982; Brown 2006). Additionally, there are records of species of the genus *Melaloncha* attacking a noncorbiculate bee of the family Halictidae and a social wasp of the genus *Polybia* (Lutz and Brown 2013; Wcislo et al. 2004). This note comprises the first records of *Melaloncha* parasitizing Euglossini and Centridini bees. *Melaloncha* specimens were collected in southeastern Brazil parasitizing *Euglossa cordata* (Linnaeus), *Euglossa townsendi* Cockerell, and *Centris analis* (Fabricius).

The *Euglossa* parasitoids were identified as *Melaloncha ronnai* Borgmeier while the *Melaloncha* attacking *C. analis* could not be identified to species as only its pupa was collected. *M. ronnai* is one of the best studied species of the genus, with its life cycle thoroughly described from specimens attacking *A. mellifera* (Ronna 1936). Considering that *A. mellifera*

was introduced in the Neotropical region, the original host of *M. ronnai* was still considered doubtful (Brown 2004). All the examined specimens are deposited in the Museu de Zoologia da Universidade de São Paulo, Brazil (MZSP).

M. ronnai Borgmeier (Figure 1a–c, puparium)

New examined material. 1f# with puparium, Ribeirão Preto, São Paulo, Brazil, 21.16°S, 47.85°W, 03.ix.2010, adult emerged from a founder female of *E. cordata*, Garófalo C.A. col.; 1f# with puparium, São Carlos, São Paulo, Brazil, 22.01°S, 47.89°W, 27.v.2013, adult emerged from a forager female of *E. cordata*, Freiria G.A. col.; 1 m# with puparium, São Carlos, São Paulo, Brazil, 21.59°S, 47.52°W, 26.iv.2013, adult emerged from a founder female of *E. townsendi*, Freiria G.A. col.

The three puparia were found occupying almost completely the internal area of the mesosoma of the bee, upside down. *M. ronnai* puparium is very similar to the one of a *Melaloncha* species described by Lucia et al. (2013), a *Bombus* parasitoid, differing only by its shorter length (3.5 mm in comparison with the 5 mm puparium of the *Bombus* parasitoid).

Melaloncha sp. (Figure 1d–h, puparium and pupa)

Examined material. One pupa from Ribeirão Preto, São Paulo, Brazil, 21.16°S, 47.85°W, 03.ix.2010, Rocha-Filho L.C. col.

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Figure 1. *Melaloncha* puparium and pupa. **a–c** *Melaloncha ronnai*. **a** Puparium basal part in ventral view, **b** puparium basal part in dorsal view, **c** detachable cap and anterodorsal plates. **d–h** *Melaloncha* sp., **d** puparium in ventral view, **e** puparium in dorsal view, **f** puparium dorsal with anterodorsal plates removed, **g** pupa in left lateral view, **h** pupa in dorsal view. *adp* Anterodorsal plate, *bp* branched projections, *ps* posterior spiracle, *rh* respiratory horn.

The puparium was removed from the interior of the mesosoma of a *C. analis*, which constitutes the first record of a *Melaloncha* attacking a Centridini bee. It is very similar to the *M. ronnai* puparium, but with slightly shorter branched projections.

ACKNOWLEDGEMENTS

We would like to thank Diego Sasso Porto by finding the parasitoid inside the *C. analis* during his studies. This study benefited from FAPESP grants:

2011/03563-0 (first author), 2011/13363-9 (second author) and 2010/52531-1 (third author).

Note scientifique: première observation de *Melaloncha* Brues, 1904 (Diptera: Phoridae) parasitant des abeilles Euglossines et Centridines

Eine wissenschaftliche Notiz über eine Erstbeschreibung von *Melaloncha* Brues, 1904 (Diptera: Phoridae) als Parasit von Bienenarten de Euglossini und Centridini

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