



## ***Walkeromya plumipes* (Philippi) (Diptera: Bombyliidae), a parasitoid associated with carpenter bees (Hymenoptera: Apidae: Xylocopini) in Argentina**

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### **Abstract**

This is the first record of the association between *Walkeromya plumipes* (Philippi) (Diptera: Bombyliidae) and *Xylocopa* Latreille (Hymenoptera: Apidae) in Argentina. The pupal development and morphology of *Walkeromya plumipes*, a parasitoid of *Xylocopa splendidula* Lepeletier, are described. A parasitized nest was collected from Santiago del Estero province, Argentina. The development of the bombyliid fly and large carpenter bees in the nest were observed in the laboratory for a period of 28 days. A detailed description of the fly adult and pupal stages were carried out. This is the first record of *W. plumipes* parasitizing *X. splendidula*. This is also the first complete description of this fly species, including male genitalia. With the data presented here the geographical distribution of the parasite is expanded. The results suggest a close relation between the parasitoid and its host, as the genus *Walkeromya* Paranov has been found parasitizing only carpenter bees of genus *Xylocopa*.

**Key words:** pupal development, genitalia description, host-parasitoid association

### **Introduction**

Members of the Bombyliidae are most frequently found in arid and semiarid portions of the world, with a few specialized forms occurring in moist tropical climates (Evenhuis, 1989). Larvae of all reared species of Bombyliidae are parasitoids (most often ectoparasitoids) or predators of other insects, primarily of immature stages of the large endopterygote orders of Coleoptera, Hymenoptera, Lepidoptera, Orthoptera, and Diptera (Boesi *et al.* 2009). The Bombyliid-*Xylocopa* association in the Neotropics is little known. The only two genera of Bombyliidae known to be associated with the genus *Xylocopa* are *Walkeromya* and *Xenox* Evenhuis, both members of the subfamily Anthracinae. Most records of this particular host-parasitoid association have been described for Nearctic *Xylocopa* species. The species *Xenox delila* (Loew), *X. simson* Fabricius, *X. simson habrasus* (Martson), *X. tigrinus* (De Greer) and *X. xylocopae* (Marstson) are recorded as parasites of *Xylocopa* in the U.S. and Mexico (Nininger 1916; Hurd 1959, 1978; Marston 1970; Minckley 1989). The only host record for *Walkeromya* spp. was by F. D. Bennett who raised a female from *Xylocopa submordax* Cockerell (now *X. (Neoxylocopa) transitoria* Perez) in Trinidad, vouchers are deposited in the National Museum of Natural History, USA (Hull 1973). The present study describes the association between these bee flies and a carpenter bee in Argentina, providing information for the first time on the pupal development and a redescription of the fly.

### **Material and methods**

This study was carried out on a nest of *Xylocopa (Schonherria) splendidula* parasitized by a species of Bombyliidae. The nest was collected in Atamisqui (28°38'54"S 64°04'58"W, 120 m.s.m), Santiago del Estero province,