

## *Milichiella lacteipennis* (Loew, 1866) is associated with beeswax (Diptera, Milichiidae)

Paul GATT<sup>1</sup> & David MIFSUD<sup>2</sup>

The Milichiidae (Diptera, Schizophora) is a family of acalypterate Diptera of worldwide distribution. Some 240 species are recognised (BRAKE, 2000). The most comprehensive account on the biology and breeding habits of the family may be found in FERRAR (1987) from which most of the following information is taken. Most species are saprophagous in the widest sense of the word, developing in decaying plant and animal matter, dung, rotting snail and mammal carcasses and detritus in birds' nests. Adult flies commonly feed on nectar, and some species feed on the honeydew of aphids and other Homoptera. The females of a few species are kleptoparasitic and feed on the body fluids of the freshly killed victims of spiders and predatory insects.

A very few species are known to have an association with Hymenoptera. Thus *Milichia ludens* (Wahlberg, 1847) and *Phyllomyza equitans* (Hendel, 1919) are myrmecophilous, developing in debris in the nests of the ant *Lasius fuliginosus* Latreille, 1798. Species in the North American genus *Pholeomyia* Bilimek, 1867 have been reared from the nests of leaf cutting bees (Megachilidae). *Madiza glabra* Fallén, 1820 was once found in the nest of a solitary ground-nesting wasp (DE MEJERE, 1946) and *Phyllomyza longipalpis* (Schmitz, 1924) was reared from the nest of *Vespa crabro crabro* Linnaeus, 1758 (PAPP & WHEELER, 1998). According to O'TOOLE (1978) *Desmometopa sordida* (Fallén, 1820) is phoretic on honey bees and consumes the collected pollen.

Seven species of Milichiidae have been known to occur in Malta for many years, but are only formally reported in this issue of the journal (EBEJER, 2012). *Milichiella lacteipennis* (Loew, 1866) (Fig. 1), an almost cosmopolitan species, occurs fairly commonly. It has been bred from both decaying vegetable matter and the dung of various animals (FERRAR, 1987; BRAKE, 2010).

One of us (DM) is a hobby beekeeper with hives in Siggiewi and Wardija in Malta. Slabs of pure beeswax were often stored in a garage in Zejtun. These slabs were obtained by melting beeswax (either from frames or from cappings when extracting honey) in a solar wax extractor (Fig. 2). The molten beeswax is collected in aluminium foil trays to produce the slab shape. When in storage, these slabs are often attacked by the Wax Moths *Galleria mellonella* (Linnaeus, 1758) and *Achroia grisella* (Fabricius, 1794). In order to kill the Wax Moths and remove the debris produced by them (Fig. 3), infested wax slabs were re-melted in the solar wax extractor on the 20<sup>th</sup> of June 2011. As soon as the wax was heating up, more than 30 small flies were observed to congregate on the underside of the top glass of the extractor. Identification of a sample revealed males and females of *Milichiella lacteipennis* which are preserved in the authors' private collections. A sample of wax and wax moth debris, including cocoons and frass was searched for immature stages of the fly but unfortunately none could be found.

<sup>1</sup> 83 Bridgwater Drive, Westcliff, SS0 0DJ, Essex UK. E-mail: pawlugatt@gmail.com

<sup>2</sup> Department of Biology, Junior College, University of Malta, Msida MSD 1251, Malta. E-mail: david.a.mifsud@um.edu.mt



**Figure 1:** *Milichiella lacteipennis*; **Figure 2:** Solar wax extractor; **Figure 3:** Beeswax infested with wax moth debris.

It is postulated that gravid female *Milichiella lacteipennis* had at some point entered the garage where the slabs of beeswax were stored and oviposited, possibly in the wax moth debris, where the larvae could have developed. Heating up of the solar extractor stimulated the puparia to eclose.

To our knowledge, this is the first time that *M. lacteipennis* has been reported in association with beeswax. Further searching for larvae or puparia of this or other species of Milichiidae not only in contaminated beeswax in storage but also in hive material may be rewarding.

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