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A new *Lampromyia* Macquart from Europe (Diptera: Vermileonidae)

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Abstract

Lampromyia bellasiciliae sp. n. is described from Sicily, Italy. The new species belongs to the *pallida* subgroup and is differentiated from related taxa in a dichotomous identification key. DNA barcodes for eight of the currently recognised ten Palaearctic species of *Lampromyia* are provided, and the calculated genetic distances between the taxa and species groups/subgroups are discussed. New distributional data for additional species of *Lampromyia* are presented and the occurrence of the Palaearctic taxa is depicted in a distribution map.

Key words: DNA barcoding, new species, Palaearctic, Sicily, wormlions

Introduction

Vermileonidae represent an old lineage of brachyceran flies, having originated in the Upper Jurassic about 150 Ma ago (Wiegmann *et al.* 2011). Their larvae are commonly known as wormlions, and have developed an intriguing feeding strategy. Just like many species of antlions (larvae of Neuroptera: Myrmeleontidae), the fly larvae wait at the deepest point of a self-made funnel-like pit, situated in fine grained soil or sand at rain-protected sites, waiting for potential prey to fall into their pitfall.

Being distributed in most zoogeographical regions (southern Palaearctic and Nearctic, northern Neotropics, Afrotropics (mainly southern Africa), Oriental), the knowledge about the diversity of the family must be considered poor. Fifty-nine recent species are placed in 11 genera, and most work on the family during the past 50 years has been conducted by the late Brian Roy Stuckenberg (1930–2009). An annotated catalogue was compiled by Nagatomi *et al.* (1999).

The genus *Lampromyia* Macquart has been thoroughly investigated by Stuckenberg (1971, 1996, 1998). This author presents a cladistic analysis for the genus, based on 20 morphological character states (Stuckenberg 1998), dividing it into the basal *pilosula* group with three species restricted to southern Africa, the *canariensis* group with three species all endemic to the Canary Islands, and the *cylindrica* group consisting of six species. The latter is divided into the *cylindrica* subgroup (four species) and the *pallida* subgroup consisting of *L. pallida* Macquart and *L. iberica* Stuckenberg. In this paper, an additional new species of the *pallida* subgroup is described from the Italian island of Sicily. Also, DNA barcodes are presented for the species at hand and the known distribution of the genus in the Palaearctic is summarised.

Material and methods

As Vermileonidae larvae are easy to collect in the field and can be reared in the laboratory without difficulties, most adult material originates from living larvae provided by colleagues. In addition, museum collections and “digital” vouchers, *i.e.*, photographs posted on biodiversity forums, have been scrutinised. The following abbreviations are used to refer to these physical and virtual depositories: biovir (<http://www.biodiversidadvirtual.org>); dipinf (<http://www.diptera.info>); PCK (personal collection Christian Kehlmaier, Dresden, Germany); SMTD (Senckenberg

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