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Two peculiar new species of *Otites* Latreille 1804 (Diptera: Ulidiidae) with reduced phallus

ELIZABETH MORGULIS

Department of Zoology, The George S. Wise Faculty of Life Sciences, Tel Aviv University, Tel Aviv 69978, Israel.

E-mail: absinthii@gmail.com

Abstract

Two new closely related species of the genus *Otites* are described and illustrated: *O. freidbergi* n. sp. from Israel, and *O. friedmani* n. sp. from Cyprus. The two species exhibit unusual male terminalia for *Otites* and other Otitini. Laboratory behavioral observations on live *O. freidbergi* individuals showed unusually long copulation duration compared to other examined Otitini species.

Key words: Ulidiidae, *Otites*, taxonomy, terminalia morphology

Introduction

Otites Latreille (Otitinae: Otitini) is a diverse Holarctic genus comprising 35 described species (Steyskal 1965; Soós 1984; Gheorghiu 1987; Carles-Tolrá 1998; Kameneva 2012; Morgulis 2013) of small to medium size flies that are mostly gray or black.

During a study at the Tel Aviv University National Collection of Insects (TAUI) I examined a relatively large number of specimens of two peculiar *Otites* species: *O. freidbergi* n. sp. and *O. friedmani* n. sp. Both species have yellowish wing without pattern, which is uncommon for the genus. In addition, the phallus of these species is unique within *Otites* (and other Otitini taxa), which usually possess a setulose and/or spinulose phallus, and is about 4–5 times as long as that of the two new species. Nevertheless, based on all other morphological characters both species fit the general concept of *Otites*.

Two additional *Otites* species with yellowish wing are *O. immaculata* (Rondani), from Italy, and *O. muscescens* Hendel, from France. The examination of the lectotype and paralectotypes of *O. immaculata*, showed that although this species resembles *O. friedmani* n. sp. in external characters, it has a typical long and setulose phallus. The holotype of *O. muscescens* was not examined since it appears to be lost; however, according to the original description (Hendel 1911), this species has a different abdominal pattern of microtrichia than both *O. freidbergi* n. sp. and *O. friedmani* n. sp.

In this paper the two new species are described, illustrated and keyed. In addition, a brief description of the mating and oviposition habits of *O. freidbergi* n. sp. is provided.

Material and methods

The morphological study is based on specimens collected in Israel and Cyprus, and deposited at Tel Aviv University (TAUI) and at the Institut Royal des Sciences Naturelles, Brussels (IRSN). Collecting was carried out using a sweeping net. For the biological observations, individuals of *O. freidbergi* n. sp. were transferred in glass vials from the field to the laboratory, where they were placed in plastic cages (30×40×25 cm) with ventilation openings (18×18) covered by a fine stainless steel net (60 mesh). The flies were provided with honey as food and moist cotton wool as a source of water. Plant material (branches, leaves etc.) and cardboard were placed in the cages as potential substrates for oviposition.

The two new species are most probably sister-taxa, considering their overall resemblance, and may represent a monophyletic group within *Otites*, since the short and bare phallus is probably an apomorphic condition for this species-group.

Observations on mating behavior of *O. freidbergi* were carried out, revealing yet another unusual characteristic for an Otitini species. All Otitini species examined by me to date (n=6, Morgulis 2012) exhibited a relatively short copulation (5–30 minutes, n=26), whereas *O. freidbergi* copulated for 240–300 minutes (n=4). This unusually prolonged copulation duration might be linked to the morphology of the male phallus in this species, though the nature of this connection is beyond the scope of the present work. Females of *O. freidbergi* readily oviposited in small crevices (e.g. cracks in branches, mesh covering cage ventilation openings), which is consistent with observations on other *Otites* species (Morgulis 2012, 2013). Rearing attempts of the larvae were unsuccessful.

Though collecting excursions were carried out constantly to different parts of Israel, *O. freidbergi* n. sp. was collected only at a single locality: the peak (1100–1200 m asl) area of Mount Meron. This is an example of a species with a highly restricted distribution (few ha), which meets the IUCN (2001) criteria for critically endangered species.

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