

Short scientific note

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Microleptinae, a new subfamily for the fauna of Italy (Hymenoptera: Ichneumonidae)

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Abstract

The Darwin wasp subfamily Microleptinae is reported for the first time in Italy, with *Microleptes obenbergeri* Gregor, 1938 discovered in Lombardy and Tuscany. This was the only subfamily of Ichneumonidae (Hymenoptera) of the European fauna not yet recorded for the country.

Keywords: Biodiversity; checklist; Darwin wasps; parasitoids; museum collections.

Introduction

Microleptinae is a small subfamily of Darwin wasps (Ichneumonidae), including 19 species distributed in the Nearctic, Palearctic and Oriental regions (Yu et al. 2016; Ranjith et al. 2024). The phylogenetic relationships of the group have long been questioned and the subfamily name “Microleptinae” has been used in the past with different meanings, more or less stretched to embrace members of the subfamilies Cyloceriinae, Diacritinae, Orthocentrinae (in part), Oxytorinae, and Tatogastrinae (see Townes 1944, 1971; van Rossem 1981, 1988, 1990; Dasch 1992; Humala 2003; Broad 2004). Currently, the subfamily is restricted to the sole genus *Microleptes* Gravenhorst, 1829 (Wahl 1986; Quicke et al. 2009; Santos 2017; Broad et al. 2018; Bennett et al. 2019), which includes five species in Europe (van Rossem 1981; Schwarz 1991; Humala 2003). Scant information on biology suggests that Microleptinae are parasitoids of soldier flies (Diptera, Stratiomyidae) (Wahl 1986; Schwarz 1991). However, it is unclear whether they are ecto- or endoparasitoids and whether they behave as idio- or koinobionts (Broad et al. 2018).

We report here the first record of the subfamily for Italy, with *Microleptes obenbergeri* Gregor, 1938 discovered in northern and central Italy. This new finding marks an important step in filling the knowledge gap of Italian Darwin’s wasp distribution, being the Microleptinae the only subfamily still

missing from the checklist of Italian Ichneumonidae (Scaramozzino 1995; Yu et al. 2016) and reaffirms the need of faunal research on this neglected group of insects in Italy and southern Europe (Di Giovanni et al. 2015, 2025).

Material and Methods

Digital pictures of the specimens were taken using a Zeiss Axio Zoom V16 microscope. The resulting images were processed with Zerene Stacker for photo stacking. The specimens collected in Lombardy are part of a project to investigate the arthropod diversity of Bosco delle Colombere, a relict lowland oak-forest of the Po Plain (Mola et al. 2023).

Depositories:

FDGC: Filippo Di Giovanni private collection, Siena, Italy

MZUF: Museo di Storia Naturale “La Specola, Università di Firenze

Results

Microleptes obenbergeri Gregor, 1938 (Figs 1, 2)

Material examined. 1♀: **Italy:** Lombardia, Brescia, Capriano del Colle, Bosco delle Colombere, 45°26’56.4”N 10°09’01.9”E, 25.iv-02.v.2020, Malaise

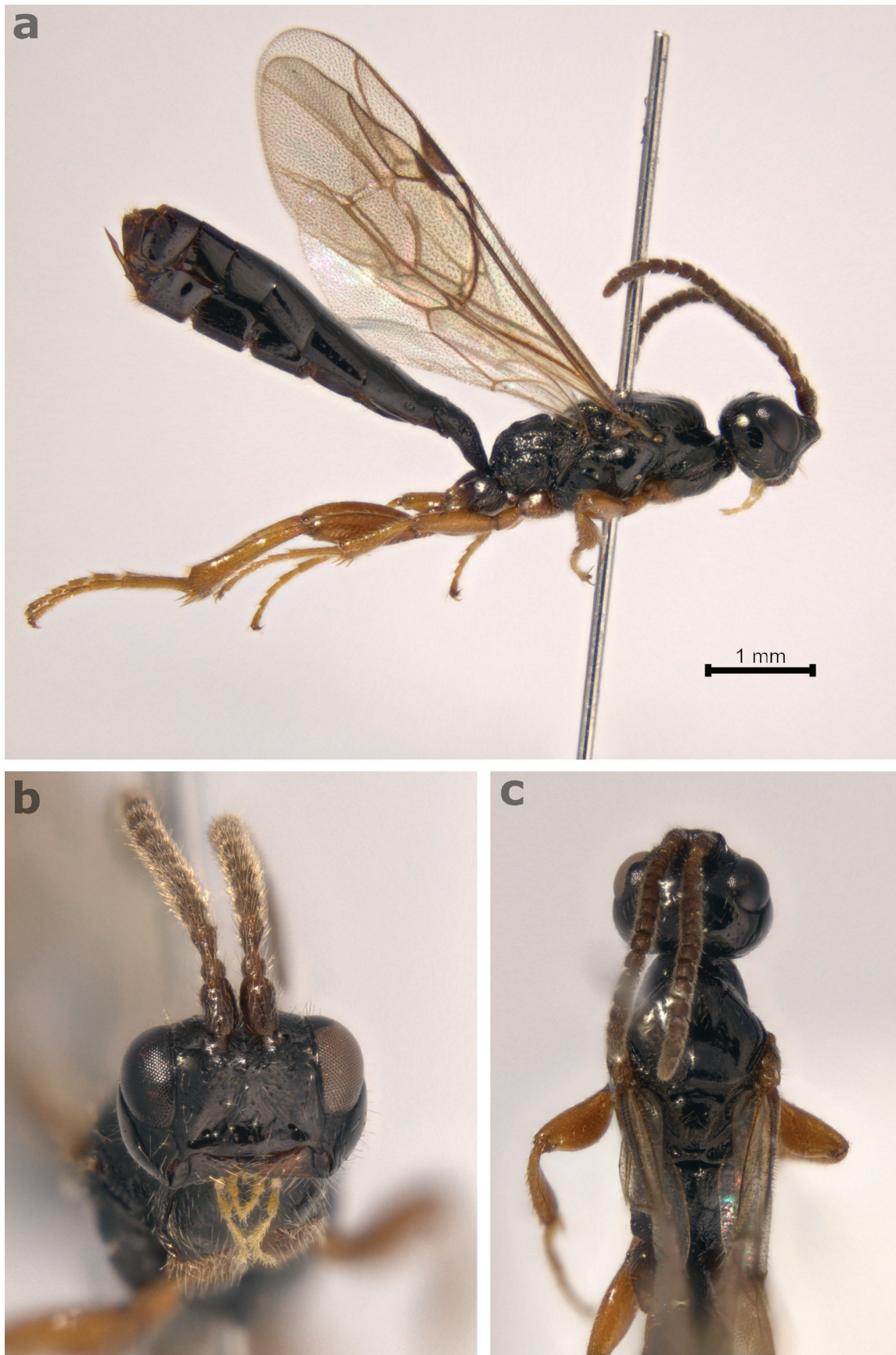


Fig. 1 – *Microleptes obenbergeri* Gregor, 1938, female; a, habitus, lateral view; b, face, frontal view; c, head and mesonotum, dorsal view.

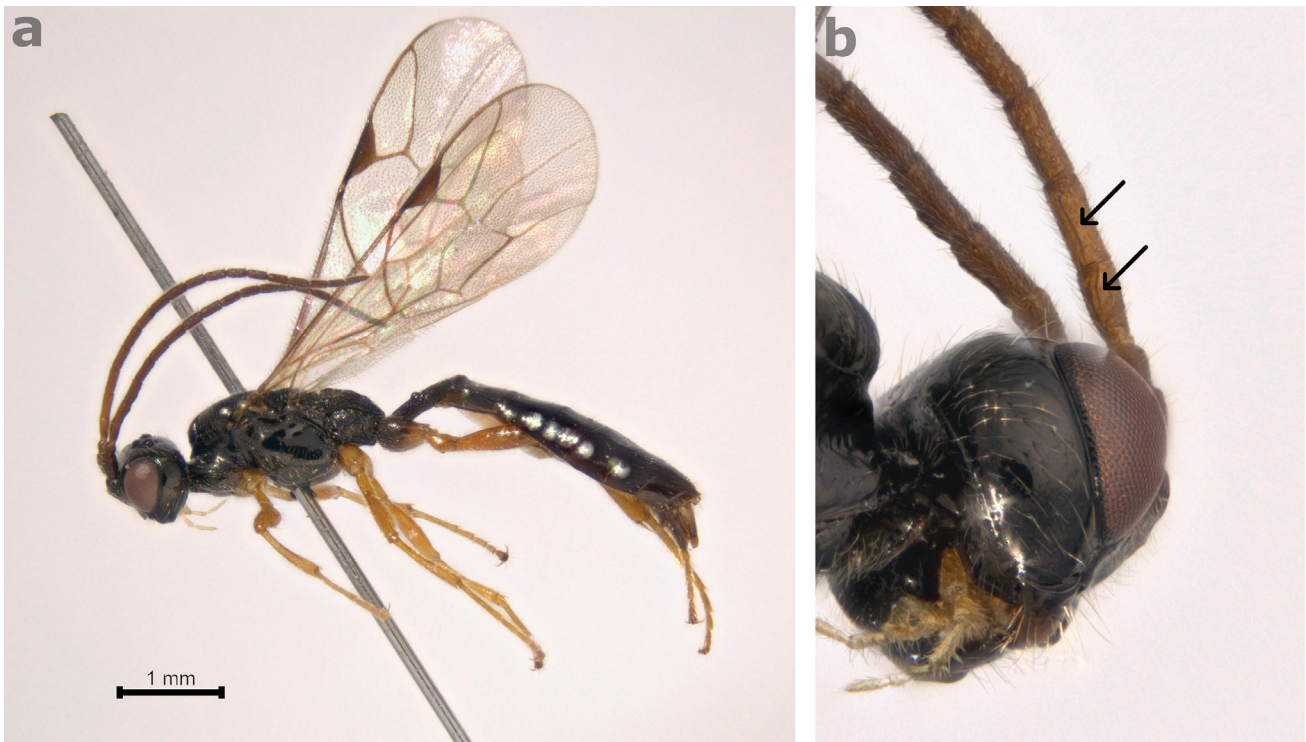


Fig. 2 – *Microleptes obenbergeri* Gregor, 1938, male; a, habitus, lateral view; b, head, lateral view, with arrows indicating tyloids on antennal segments 3–4 (i.e., flagellar segments 1–2).

trap, F. Di Giovanni & M. Schwarz det. (FDGC); 1♂: same data as female (FDGC). 1♀: Toscana, Arezzo, Riserva Naturale Ponte a Buriano, Penna, iv-v.1998, pitfall trap, B. Cecchi, A. Sforzi & L. Bartolozzi leg., M. Schwarz det. (MZUF); 1♂: Toscana, Arezzo, Parco Nazionale delle Foreste Casentinesi, Monte Falterona e Campigna, loc. Sacro Eremo, 1100 m, 16.vi.1995, P. Abbazzi, L. Bartolozzi, B. Cecchi & A. Sforzi leg., M. Schwarz det. (MZUF).

Diagnosis. The species can be distinguished from the other European species of the genus by the following features: 3rd segment of the antenna in the female stocky, less than 3 times as long as wide, uniformly widened towards the apex; male flagellum with tyloids on antennal segments 3 to 4/5/6; clypeus without a median tooth or tubercle; temple slightly widened behind eyes; hind coxa shiny; propodeum with costulae distinct (Gregor 1938; van Rossem 1988; Schwarz 1991; Varga & Kostro-Ambroziak 2021).

Distribution. Czech Republic (Gregor 1938); Austria (Humala 2003); Italy (new record).

Discussion

The parasitoid family Ichneumonidae is currently divided into 42 subfamilies, 36 of which are present in Europe (Broad et al. 2018). Some of these subfamilies are rather small, represented in Europe by a single genus or

by one or a few species (i.e., Adelognathinae, Agriotypinae, Alomyinae, Ateleutinae, Collyriinae, Diacritinae, Eucerotinae, Lycorininae, Microleptinae, Neorhacodinae, Orthopelmatinae, Oxytorinae). In the previous checklist of the Italian fauna (Scaramozzino 1995), 33 subfamilies were listed, albeit with a classification or nomenclature sometimes different from the current one. The two subfamilies (both monospecific in Europe), Ateleutinae and Diacritinae, were added by Di Giovanni et al. (2015), leaving the subfamily Microleptinae as the only one still absent from the list of Italian Darwin wasps. The finding of *Microleptes obenbergeri* reaffirms how much the true diversity of this group in Italy remains still underestimated and highlights the need to fill distributional gaps for many species, some of which can be also relatively common. It should be noted that the new record is also the result of both new sampling (Lombardy) and the studying of extant entomological collections (MZUF), demonstrating how new discoveries can come up both from the investigation of yet little-explored regions and the valorisation of historical repositories.

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