

Short scientific note

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First record of *Mordellistena algeriensis* Ermisch, 1966 in Italy (Coleoptera: Mordellidae)

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Abstract

Mordellistena algeriensis Ermisch, 1966, so far known from Algeria and Tunisia, is now being reported from Italy for the first time, based on the two specimens collected recently in Sardinia. Details of the new record, differential diagnosis of the species, figures of the diagnostic characters, and habitus images are provided.

Key words: Sardinia, tumbling flower beetles, distribution, type material, genitalia.

Introduction

Mordellistena A. Costa, 1854 represents the largest genus within the family Mordellidae, with more than 150 species known to occur in Europe. Members of the genus are associated with natural, as well as secondary grassland habitats and open forests, where the larvae feed in stems of herbaceous plants, while the adults are pollinivorous. The Italian fauna of the genus *Mordellistena* has been continuously documented since the nineteenth century by eminent authors such as Costa (1854), Emery (1867), Baudi (1877), and more recently Franciscolo (1995) and Ruzzier (2013). Forty-eight species have been reported from Italy and ten of them are known to occur in Sardinia (Ruzzier 2013; Selnekovič & Ruzzier 2019; Selnekovič & Improta 2020).

During a recent visit to Sardinia in 2021, two specimens of *Mordellistena algeriensis* Ermisch, 1966 were collected in the south-eastern part of the island, making it the first record of the species from Italy and Europe. *Mordellistena algeriensis* (Fig. 1) was originally described based on a single male specimen from Sidi Ferruch in Algeria. Since then, only two other records from the same country (Batten 1980) and two from Tunisia (Horák 2008; personal communication) have been reported. Here, we present the details of the new record from Italy, along with the species' differential diagnosis, habitus photograph, and figures of the male genitalia.

Material and methods

Two specimens of *Mordellistena algeriensis* were swept by an entomological net from the *Daucus carota* inflorescences and immediately killed in ethyl acetate fumes. The specimens were glued to the cardboard mounting cards. Morphological observations were made using a Leica MZ16 stereomicroscope (Leica Microsystems, Germany) with magnification up to 120×, illuminated with diffuse light (LED strips; 6400 K). Measurements were made with the same microscope using an eyepiece graticule. Body length (BL) is a combination of head length, pronotal length, and elytral length; elytral length (EL) was measured from the apex of the scutellum to the elytral apices along the suture; right paramere length (RPrL) and left paramere length (LPrL) are the maximum lengths of the structures. Male genitalia were dissected, treated with lactic acid for several days, dehydrated in 96% ethanol, and temporarily mounted on a slide in Euparal (Paradox Co., Poland). After examination, the genitalia were glued to the same card as the respective specimen using 5,5-dimethyl hydantoin formaldehyde (Entomopraxis, Spain). Drawings of male genitalia were made using a Leica drawing tube attached to a Leica DM 1000 compound microscope (Leica Microsystems, Germany) and subsequently traced by Rotring Isograph technical pens (Rotring, Germany). Habitus photographs were taken using a Canon EOS 5D mark II camera (Canon, Japan) attached

to a Zeiss Axio Zoom.V16 stereoscope (Carl Zeiss AG, Germany). The image stacks were produced manually, combined using Zerene Stacker 1.4 software (Zerene Systems LLC, United States of America), and edited in Adobe Photoshop CC (Adobe). Recently collected specimens were compared with the type series of *M. algeriensis*, *M. pyrenaica* Ermisch, 1966, *M. rhenana* Ermisch, 1956, *M. wankai* Ermisch, 1966, *M. maroccana* Ermisch, 1966, *M. microgemellata* Ermisch, 1965, *M. zoltani* Ermisch, 1977, *M. aureotomentosa* Ermisch, 1977, *M. elbrusicola* Ermisch, 1969, and *M. gemellata* Schilsky, 1899. The examined material is deposited in Senckenberg Naturhistorische Sammlungen, Dresden, Germany (SNSD) and Dávid Selnekovič collection, Bratislava, Slovakia (DSBS).

Results

Mordellistena algeriensis Ermisch, 1966

Mordellistena algeriensis Ermisch, 1966b: 40–42 (original description; type locality: Sidi Ferruch, Algeria)—Batten 1980: 43–44 (localities, figures)—Horák 2008: 96 (catalogue)—Horák 2020: 92 (catalogue).

Type material examined. *Holotype*: Algeria, Algérois, Sidi Ferruch, 6 Jun 1954, G. Fagel leg., 1 ♂, SNSD. Photograph of the holotype is available at Zenodo (<https://doi.org/10.5281/zenodo.5838168>); male genitalia are presented in Fig. 2 a.

New records. Italy: Sardinia, Castiadas, Monte Turno env., 39.206812N, 9.562685E, 7 m, 1 Jul 2021, on *Daucus carota* L. flowers, D. Selnekovič leg., 2 ♂♂, DSBS.

Two adult specimens were swept from the *Daucus carota* inflorescences in the secondary grassland habitat on sandy soil near the coast around 5 p.m. (Fig. 3). During the same collecting event, five specimens of *Mediimorda bipunctata* (Germar, 1827), three specimens of *Mordellistena purpurascens* Costa, 1854, twelve specimens of *M. confinis* Costa, 1854, and six specimens of *M. minima* Costa, 1854 were also sampled.

Differential diagnosis. *Mordellistena algeriensis* may be assigned to the *M. gemellata* species group (sensu Ermisch 1956) based on the following morphological characters: first four antennomeres are slenderer than the following segments; hind tibia bear one apical ridge and two short lateral ridges that are nearly perpendicular to the dorsal tibial margin. Within the *M. gemellata* species group, *M. algeriensis* is further characterised by yellowish vestiture on the dorsal surfaces, black apical spines on the hind tibia, large body dimensions (BL: 3.8–4.16 mm), relatively long and narrow elytra, with elytral length / width ratio 2.26–2.30, male protibia expanded basally, with a cluster of long setae, and characteristically shaped parameres with



Fig. 1 – *Mordellistena algeriensis* Ermisch, 1966, male from Sardinia, body length: 4.16 mm.

long dorsal and ventral processes (Fig. 2). The parameres are also conspicuously large in proportions to the body dimensions (RPrL: 0.38–0.41, LPrL: 0.43–0.49).

The most closely resembling species with similar body dimensions are *Mordellistena peloponnesensis* Batten, 1980, *M. pyrenaica* Ermisch, 1966, and *M. gemellata* Schilsky, 1899. They may be differentiated from *M. algeriensis* by differently shaped parameres (Fig. 2; for *M. peloponnesensis* see Batten 1980; for *M. pyrenaica* see Ermisch 1966a; for *M. gemellata* see Ermisch 1963). In

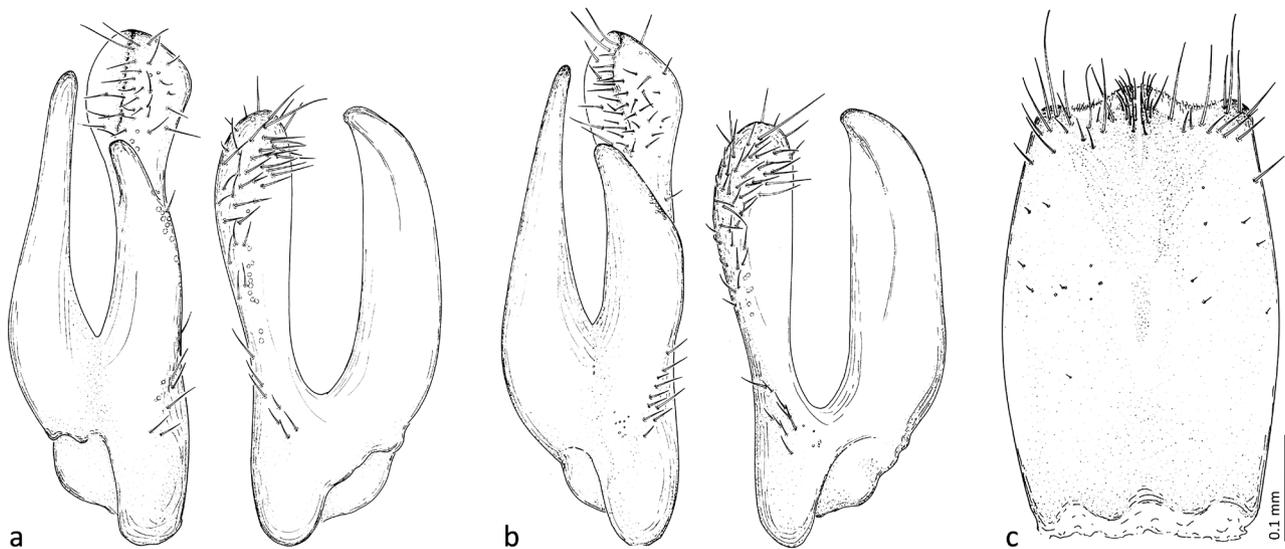


Fig. 2 – *Mordellistena algeriensis* Ermisch, 1966, male terminalia: **a**, parameres, holotype; **b**, parameres, male from Sardinia; **c**, sternite VIII, male from Sardinia.

addition to the different shape, the parameres of the former three species are significantly smaller in proportion to body dimensions than in *M. algeriensis*—*M. algeriensis* EL / RPrL ratio: 5.89–6.42, EL / LPrL ratio: 5.21–5.54; *M. pyrenaica* EL / RPrL ratio: 6.78, EL / LPrL ratio: 6.42; *M. gemellata* EL / RPrL ratio: 8.41, EL / LPrL ratio: 7.53; *M. peloponnesensis* EL/RPrL ratio: 7.81, EL/LPrL ratio: 6.54.

Mordellistena aureotomentosa Ermisch, 1966 described from Morocco, differs from *M. algeriensis* by smaller body dimensions (BL less than 3.95 mm), conspicuously light yellowish and dense pubescence on the pronotum and elytra, and smaller, differently shaped parameres (Ermisch 1966b).

Mordellistena maroccana Ermisch, 1966 distributed in Morocco and Tunisia, differs from *M. algeriensis* in the distinctly shorter and broader elytra—the elytral length / width ratio in *M. maroccana* is 2.0, while in *M. algeriensis* it is 2.26–2.30.

Distribution. *Mordellistena algeriensis* was described on the basis of a single specimen from Sidi Ferruch, Algeria (Ermisch 1966b). Later Batten (1980) reported two other localities from the same country—Bouira and Ain Zaatout. Finally, Horák (2008; personal communication) reported the species from Sousse and Monastir in Tunisia. Our recent finding of *M. algeriensis* from Sardinia represents the first record from Italy and Europe (Ruzzier 2013) and is the northernmost record of the species.

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Fig. 3 – Habitat of *Mordellistena algeriensis* Ermisch, 1966 in Sardinia, Castiadas, Monte Turno env., 39.206812N, 9.562685E.

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