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## ***Smicromyrme corriasi* n. sp. from Sardinia and new data on some Italian *Smicromyrme* and *Stenomutilla* (Hymenoptera, Mutillidae)**

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**ABSTRACT** - We describe a new endemic Mutillidae species from Sardinia for which the female is unknown: *Smicromyrme corriasi* ♂ sp. nov., captured with a Malaise trap near Oliena (NU) in 2012-2013. This new species belongs to the subgenus *Astomyrme* Schwartz, identifiable by a notable thickening of the forewing second and third radial sector(s). In addition to the four *Smicromyrme* Palearctic species exhibiting partially thickened venations on the forewing, *Physetopoda beaumonti* (Invrea) from Morocco also has this feature, but differs from *Smicromyrme* by the absence of the lateral felt lines on the second metasoma sternum. After studying *Smicromyrme elthinica* Invrea, 1960 holotype, we conclude that this species belongs to the genus *Physetopoda* stat. nov. because in the female the scutellar scale is well developed, the pygidial plate is narrow and roundish in the fore area, with lateral long bristles and partly smooth in the distal area where the striae disappear. The presence of these characters indicates that the specimen belongs without a doubt to *Physetopoda*. We describe the female of *Smicromyrme suberratus* Invrea, 1957 nov., and we report the first record for Sicily of *Stenomutilla argentata* (Villers, 1789).

**Key words:** Mutillidae, *Stenomutilla*, *Smicromyrme*, *Physetopoda*, n. sp., Sardinia, Sicily.

**RIASSUNTO** - *Smicromyrme corriasi* n. sp. della Sardegna e nuovi dati su alcune specie italiane di *Smicromyrme* e *Stenomutilla* (Hymenoptera, Mutillidae). Viene descritta una nuova specie di Mutillidae della Sardegna: *Smicromyrme corriasi* ♂ la cui femmina è sconosciuta. Essa appartiene al sottogenere *Astomyrme* Schwartz e fa parte di una serie di taxa dalla particolare conformatore alare conseguente ad un forte ingrossamento della nervatura marginale a livello della II nervatura trasverso cubitale dell’ala anteriore. Oltre alle 4 specie di *Smicromyrme* presenti nell’area paleartica (vedere Tab. 1) anche *Physetopoda beaumonti* (Invrea) del Marocco possiede l’ala anteriore con venature parzialmente ingrossate. Essa si distingue dalle *Smicromyrme* per l’assenza delle linee feltrate sul II sternum del metasoma. Dall’esame dell’olotipo di *Smicromyrme elthinica* Invrea, 1960 risulta che essa appartiene al genere *Physetopoda* stat. nov. in quanto l’unguicolo scutellare è ben sviluppato e l’area pigidiale è ristretta e tondeggianti anteriormente, contornata ai lati da lunghe setole, parzialmente liscia nella parte distale ove le striae scompaiono. Viene inoltre descritta la ♀ di *Smicromyrme suberratus* – nuova. Infine viene segnalata per la prima volta in Sicilia la presenza di *Stenomutilla argentata* (Villers).

**Parole chiave:** Mutillidae, *Stenomutilla*, *Smicromyrme*, *Physetopoda*, n. sp., Sardegna, Sicilia.

## Introduction

In the 2012 and 2013 summer seasons we placed two Malaise traps in the same site (fig. 1): the olive grove of Mr. Antonio Corriasi, near Oliena (Nuoro, Sardinia) (40° 16' N- 9°24'E, about 300 m. above sea level). Among the Hymenoptera captured by the trap we found 4 male individuals of a *Smicromyrme* belonging to a new species and, in addition, a single male of a further new species. In this contribution we describe the first species represented by the 4 males. The second one will be described when further material become available. No females have been captured up to now.

We describe the females of *Smicromyrme suberratus* Invrea, 1957 from Lampedusa Island. We report the first record for Sicily of *Stenomutilla argentata* (Villers 1789).

In addition the holotype of *Smicromyrme eltihnica* Invrea (1960) from Egypt was studied. This species result to belong to the genus *Physetopoda* **st. nov.** because in the female the scutellar scale, as in this case, is well developed, the pygidial plate is narrow and roundish in fore area, with lateral long bristles and partly smooth in the distal area where the striae disappear. The presence of these characters indicate that the specimen belongs without a doubt to *Physetopoda*. We also report that *Physetopoda eltihnica* also is also present in as it was collected in large numbers by Mr. Maurizio Matteini Palmerini in the Douz Oasis in the year 1987.

## Material and methods

The material was identified following the keys of Pagliano e Strumia (2007) and compared with the specimens in the Invrea collection in the Museo Civico di Storia Naturale, Genoa.

We identify a *Smicromyrme* female, captured on Lampedusa Island the 14.IX.2012, as the female of *Smicromyrme suberratus* Invrea, 1957, since this female differs from those of *Smicromyrme fasciaticollis* (Spinola, 1843), the only other species found in Lampedusa and presently known by male and female individuals.

A secure association of males and females in Mutillidae is possible only when the specimens are captured in copula or reared from the same nest. In other cases the combination is hypothetical and to be confirmed as above. In this case the association is very probable but not secure.

Digital images were taken using a Nikon 990 camera mounted on a Nikon SMZ-2T stereoscopic microscope and processed by Adobe Photoshop<sup>©</sup> software.

Acronyms and specimens depositaries: (GPC) Guido Pagliano Collection, Torino; (FSC), Franco Strumia Collection, Pisa.



**Fig. 1** Trap Malaise at Oliena.

### **Smicromyrme corriasi** Pagliano n. sp. (fig. 2)

This new species is most likely endemic of Sardinia. *Smicromyrme* is a large genus including 14 Italian species. In the Mediterranean region 5 species of this genus show a notable thickening of fore wing veins of the second and third radial sector(s).

The Smicromyrmini is a group represented by many species in the Mediter-



**Fig. 2** Habitus *S. corriasi* ♂ in dorsal view.

ranean Region; five of those are easily distinguished by a notable thickening of fore wing veins of the second and third radial sector(s). One, as said above, belong to genus *Physetopoda* (*Physetopoda beaumonti*, Invrea 1952) and four to the subgenus *Astomyrme* Schwartz, namely: *Smicromyrme esterina* Pagliano, 1983; *Smicromyrme opistomelas* Invrea 1950; *Smicromyrme suberratus* Invrea 1957; and *Smicromyrme corriasi* n. sp.).

Distinctive features of this *Smicromyrme* are summarized in Table 1.

**Type material:** Holotype ♂. Sardegna, Oliena (Nuoro), malaise trap in the Corrias' olive grove, 5/25-VIII-2012, leg. F. Strumia (GPC). Paratypes 2 ♂♂ ibidem, 29.VI-18.VII-2012 (1 ♂ in GPC, 1 ♂ FSC); 1 ♂ paratype ibidem 13/28.VII.2013 (in GPC); average body length 6 mm.

### Description

Head (fig. 3).

Head black, mandible black and rufous distally (fig. 3); face wider than high; antennal socket dark red-brown; scape black a little rufous distally; flagellomeres darker on the dorsal side, rufous on the inferior side; mid ocellus diameter larger than flagellomeres width; face with a median sulcus; malar space shorter



**Fig. 3** Head of *S. corriasi* ♂ in fore view.

then the ocellar diameter; punctuation between ocelli sparser than on frons and malar space; the relative length of antennal segments starting from the scape is: 14.3.5.8.9.9.9.8.8.8.8.8; scape lightly curved and concave on external side, with two longitudinal carinae on all length and smooth between; flagellomeres with a short pubescence visible at 28x magnification

**Mesosoma (fig. 4):**

Pronotum rufous with the anterior declivity black, punctures close: the distance less than punctures diameter; mesonotum and tegula rufous; scutellum and metanotum black; mesopleura rufous in the upper third, finely striated longitudinally, punctures nearly touching in the 1/3 upper half but separated 2-3 times their diameter in the lower part. Tegula smooth with only a few sparse punctures on the basal third; leg black, fore tibia and fore tarsus rufous; legs with small punctures, more numerous on hind and mid tibia, the spurs are brown of fore leg and white on mid and hind legs. The wing is darkened in the radial cell and show a notable veins thickening of the second and third radial sectors (fig. 5). In all Western Europe species this vein thickening is present only in *S. esterina* and *S. corriasi* n. sp. In *corriasi* the stigma is near elliptic in shape, while triangular in *esterina*: in addition the propodeum is black in *corriasi* and red in *esterina*.

**Metasoma (fig. 4):**



**Fig. 4** *Habitus S. corriasi ♂ in lateral view.*



**Fig. 5** *Apical fore wing of S. corriasi ♂.*



**Fig. 6** Genitalia of *S. corriasi* ♂ in lateral and dorsal view.

The metasoma is black and shining; metapleura striated and punctuated on the lower part; erect white setae, as long as scape, on all body, a little shorter on legs (fig. 4). On first tergum, T I, the punctures are small and nearly touching; on II tergum (T II) a little larger and sparser: punctures distance is 3-5 times the diameter; the felt lines are patent, on sternum about half longer than on tergum; puncture on T III-VI small as on T I the distance 1-1.5 times the diameter; on TVII punctures a little larger more sparser on disc than laterally.

Male genital (fig. 6). Volsella with pubescence on lower side longer than larger, the distance from paramere of about his length.

Female unknown

Variability: paratypes are similar to the holotype.

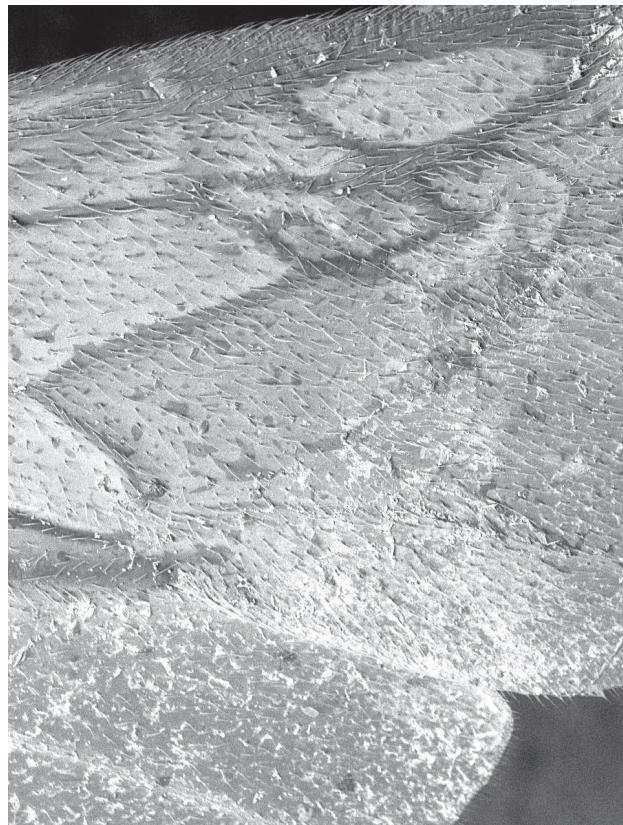
Etymology: the new species is dedicated to Mr. Antonio Corrias of Oliena, the owner of site where the new species was captured.

Species	Anterior Ocellus	Antennal color	Legs color	Propodeum color	Punctures of II tergum	Body
<b>corriasi</b> fig. 4	Same diameter as middle flagellomere thickness	Black above rufous, below	Black, with tibiae and tarsi rufous	Black	Shallow, distance 3-5 times puncture diameter	Slender
<b>esterina</b> fig. 7	Diameter smaller than middle flagellomere thickness	Black above, rufous below	Femora black; tibiae and tarsi rufous	Rufous	Deep, distance 2-3 times puncture diameter	Slender
<b>opistomelas</b> fig. 8	Diameter About two times middle flagellomere thickness	Rufous	Dark red	Black	Shallow and scattered on disc, laterally with distance about the puncture diameter	Robust
<b>suberratus</b> fig. 9	Diameter more than twice the middle flagellomere thickness	Rufous	Rufous	Rufous	Shallow and scattered on disc, denser laterally	Robust

**Tab. 1** Distinctive features of the 4 *Smicromyrme* species exhibiting thickenings in wing venations

Female description of *Smicromyrme suberratus* – nov. (fig. 9)

Material studied: Lampedusa Island, 1 ♀, 14.IX.2012 leg. Ester Pagliano.  
 Body length 3.2 mm. Head black, apart clipeus. Mandible basally and antennal flagellomeres 2-4 rufous. Mesosoma and legs rufous, with darker tibiae. Metasoma black, yellow around pygidium.  
 Pubescence silvery and appressed, forming a weak spot on frons, and a diffuse



**Fig. 7** Apical fore wing of *S. esterina* ♂.

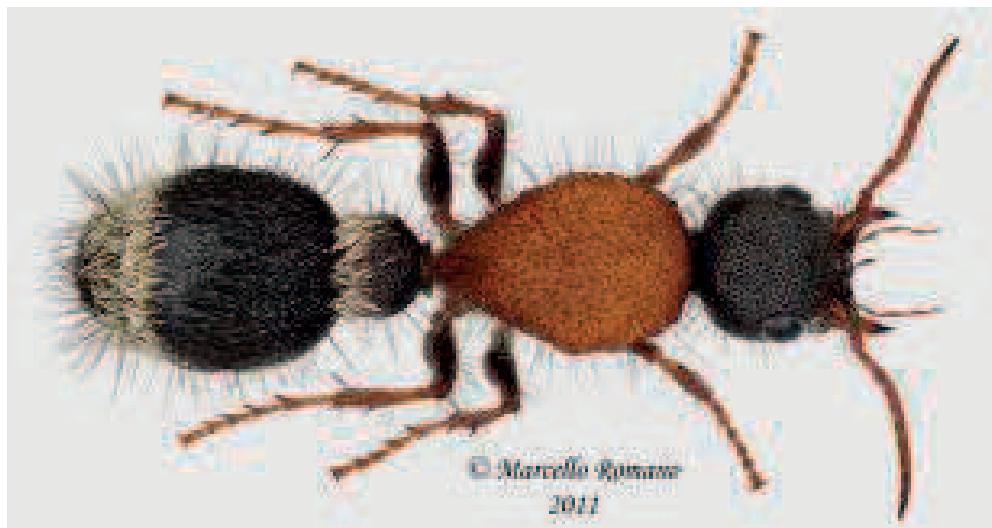


**Fig. 8** Habitus *S. opistomelas* ♂ in dorso-lateral view.



**Fig. 9** *Habitus Smicromyrme suberratus ♀.*

spot on disc of tergite II, from the anterior border up to the middle. The white pubescence forms a line along the T II posterior border; the pubescence is white on T III and black on T IV and T V. Head with deep punctures spaced more than the diameter. In dorsal view genae are long as the eye width.



**Fig. 10** Habitus of *Stenomutilla argentata* ♀.

## New species from Sicily

*Stenomutilla argentata* (fig. 10) is a widespread species from Southern Europe (Greece, Italy, France, Spain, Portugal and Morocco). No records are known from Sicily. We report the capture of a female the 05.V.2002 near the lake Spartà (ME) in the Nebrodi Regional Park.

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