

A NEW SPECIES OF *PHYSETOPODA*  
FROM SOUTH-EASTERN SPAIN  
(Hymenoptera, Mutillidae)

PIETRO LO CASCIO (\*) and FLAVIA GRITA (\*)

A large part of the entomological collection of the late Francisco J. Suárez, one of the most important specialists of the family Mutillidae of the 20<sup>th</sup> century, is now kept at the Museo Nacional de Ciencias Naturales of Madrid (MNCN). This material includes several females, partly collected by himself, which belong to the genus *Physetopoda* Schuster, 1949, and remained still unidentified, probably due to the great confusion that for a long time has complicated especially the taxonomy of the group previously referred by authors to *Mutilla* or *Smicromyrme* “*montana*” sensu lato, including some taxa which have been connected with this latter (see e.g. André 1899-1903; Hoffer 1936; Invrea 1964). One of these problems concerned the true identity of *Mutilla subcomata* var. *sericeiceps* described by André in the eighth volume of his “Species des Hyménoptères d’Europe & d’Algérie” (André 1901: 265). This species was known only of Sardinia and Corsica until the review of Petersen (1988), who has designated the lectotype and recognized a wider distribution, extended to several countries in Southern Europe (Lelej 2002; Lelej et al. 2003); in the same paper, Petersen (1988) has synonymized *Smicromyrme moltonii* Invrea, 1955 with *S. sericeiceps*, noting how, since both species were redescribed by Invrea on his “Fauna d’Italia” (Invrea 1964: 218, 221), the latter was misinterpreted by this author while the former agrees with the true André’s taxon. Invrea’s opinion was based on the study of some specimens from Asinara Island (NW Sardinia) that, curiously, had been previously identified as *Mutilla rufipes* just by André (see Mantero 1909), but where he still held to recognize *S. sericeiceps* (Invrea 1951). This material has not been studied later, therefore its identity remains unclear; as usual among cryptic species belonging to the

(\*) Associazione Nesos, Via Vittorio Emanuele, 24 - 98055 Lipari (ME), Italy.  
E-mail: plocascio@nesos.org.

family Mutillidae, it however suggests the probable occurrence of “like-*sericeiceps*” yet undescribed forms, which in some cases can be partly sympatric with *Physetopoda* (formerly *Smicromyrme*) *sericeiceps* (André, 1901). One of these, identified by us among the material from Suárez’ collection, is described in the present paper. The placement of the new species within the genus *Physetopoda* agrees with points 6 and 2 of the keys for tribe Smicromirmini given, respectively, by Lelej (2002: 123) and Pagliano & Strumia (2007: 68), where the diagnostic characteristics are the pygidial area wholly or partially smooth, narrowed basally and closed laterally, surrounded by long setae, and the scutellar scale well developed; it should be noted that however this latter seems highly variable among species and may even fail in some ones, such as *Physetopoda lampedusia* (Invrea, 1957) recently referred to this genus by Pagliano & Strumia (2007). Morphological terminology in the description follows Huber & Sharkey (1993).

### ***Physetopoda romanoi* n. sp.**

DIAGNOSIS. A small-sized female of *Physetopoda* similar to *P. sericeiceps* (André, 1901), from which it differs primarily in the shape of head, eyes, and scutellar scale, and in punctuation pattern of genae; the anterior margin of mesosoma is darkened and covered by dense black pubescence, likewise to the congeneric *P. trioma* (Invrea, 1955) and *P. punctata* (Latreille, 1792). On the whole, the habitus of the new species is well characterized by strong and widely distributed pubescence, with silvery-white dense and recumbent setae both on vertex and mesosoma, as well as on tergal spot and bands of metasoma.

EXAMINED MATERIAL. Holotypus: ♀, labelled “La Cañada / Almería 19-III-1950 / Cobos Sánchez leg.”. Paratypi: 1 ♀, “La Cañada / Almería (España) / J. Segura / [beneath] 4-VII-1946”; 4 ♀♀, “La Cañada / Almería (España) / J. Suárez leg. / [beneath] 8-VII-1956”, “24-VI-1956” [2 specimens] and “12-IV-1958”; 2 ♀♀, “Berja / Almería (España) / Angelita leg. / [beneath] 14-VIII-1946”; 2 ♀♀, “Punta Sabinal / Almería / J. Suárez coll. / [beneath] 20-VII-1957”; 1 ♀, “Gérgal / 19-VI-1951 / Suárez leg.”; 1 ♀, “Cuevas los Medinas / Almería 15-XI-77 / A. Cobos coll.”; 1 ♀, “Sierra Alhamilla / Térm. Tabernas Alm. / A Cobos coll. / [beneath] IV-1961”. Holotypus and paratypi deposited in the MNCN; two paratypi deposited in the authors’ collection.

DESCRIPTION OF THE HOLOTYPE. Female. Length mm 4.68. Habitus as in fig. 1a-b. Head black, roundish, 1.25 broader than long, as wide as

the pronotum. Surface bright and shiny, densely punctuated, with punctuation deep and irregularly shaped, interpunctual spaces equal or closer than the diameter of a single point; the punctuation is less evident in the genae, while the surface of the postgenae is slightly rugulose and becomes weakly strigate in the hypostomal bridge; the space between frontal carina and toruli is shiny and scarcely punctuated. Kidney-shaped eyes (fig. 3b), protruding from the profile of the head; maximum orbital diameter 0.8 of the interocular distance; ratio between maximum and minimum orbital diameter is 4:3. Clypeus with the margin of upper triangular part slightly depressed in the middle, and with a small ferruginous tubercle occurring in the transverse carina. Mandibles ferruginous, darkish at the apex, unidentate, with a weak inner preapical tooth; palps pale red. Antennae reddish, only slightly darkened in the distal flagellomeres, with very curved scapes; ratio between scape, pedicel and first flagellomere is 1:0.26:0.36.

Mesosoma red, with a distinct dark band on the anterior margin and less distinctly darkened on the posterior slope of propodeum, 1.32 longer than broad, with almost parallel sides; anterior margin moderately arched, with rounded angles. Surface with very dense, deep, round and regular punctuation, and shiny interpunctual spaces. Pleurae weakly concave, with shiny surface sparsely punctuated mostly on pro- and metapleuron. Thorax transverse carina almost imperceptible. Scutellar scale short but prominent, darkened at the apex. Propodeum gently truncated; the posterior propodeal face looks more opaque than the dorsum and with a punctuation more elongated.

Legs entirely light red, without salient characteristics.

Metasoma 1.44 broader than mesosoma; width of tergum 1 is 0.41 of tergum 2; this latter as broad as long, with close-up punctuation, points small and slightly oval in shape, with larger diameter along the vertical axis, and surface of interpunctual spaces smooth and shiny. Punctuation of sternum 2 sparsely foveolate, denser on posterior margin; surface of sterna 3, 4 and 5 finely imbricated and sparsely punctuated from anterior to posterior margins respectively.

Pubescence dense on the whole, giving a silvery appearance to the specimen, except its parts strongly darkened. Head with a wide spot extended approximately on the space between eyes and covering entirely the vertex, whose silvery-white pubescence is dense, recumbent and divergent from a narrow median line; on the occiput, some brown setae are diverging to the sides of the head; frons with yellowish erect setae,

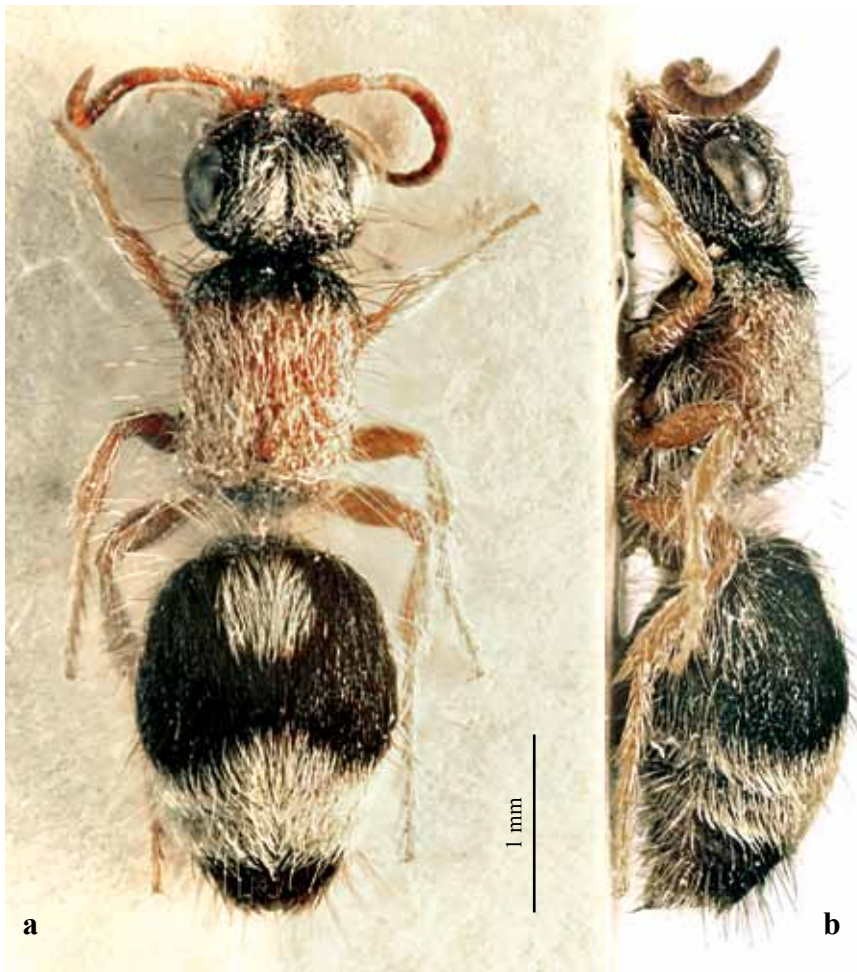


Fig. 1 – habitus of *Physetopoda romanoi* n. sp. in dorsal (a) and lateral view (b).

some of which darkened at the apex; genae with silvery-white recumbent setae forward facing; 3-5 long erect setae around the eyes; scape, pedicel and basal half of first flagellomere covered by silvery micro-pubescence; erect silvery setae on basal half of mandibles and clypeus, the latter shorter and forming a fringe. Mesosoma with the dark band on anterior margin densely covered by black, long, recumbent or semi-erect setae with a flattened section; fairly dense recumbent silvery-white pubescence on dorsum, with some setae darkened at the apex and scattered



Fig. 2 – pygidial plate of one of the paratype of *P. romanoi* n. sp. with weak and irregular impressions.

erect setae; few short reddish setae around the scutellar scale; mesosoma laterally with silvery-white erect and long setae, darker near the anterior margin; posterior propodeal face with semi-erect silvery-white setae facing back. Legs covered by silvery-white pubescence, slightly longer on femora. Tergum 1 covered by recumbent black setae, with long erect silvery-white setae reaching beyond the posterior propodeal face; tergum 2 also covered by recumbent black setae, basally with a large, sub-square shaped, silvery-white spot extended almost to the half of the segment, apically with a well defined band of the same pubescence, considerably dilated medially, and laterally with less dense silvery-white setae forming two spots (not visible in dorsal view); tergum 3 silvery-white pubescent, less in the middle (probably after abrasion); terga 4 and 5 less densely covered by black pubescence (also abraded in the middle), with long erect brownish and silvery-white setae; tergum 6 with scattered silvery-white short setae; some silvery-white setae around the pygidial area.

Tergal felt-line slightly closer to the posterior margin of the segment; ratio between distance from basal margin, length of felt-line and distance from posterior margin is 1:0.72:0.66.

Pygidial plate wholly smooth.

VARIABILITY. Length of other examined specimens (N = 11) ranges from 3.64 to 5.55 mm. Punctuation on the occipital region may be more widely spaced than in holotypus, with interpunctual spaces slightly larger than the diameter of a single point. Antennae and legs are sometimes

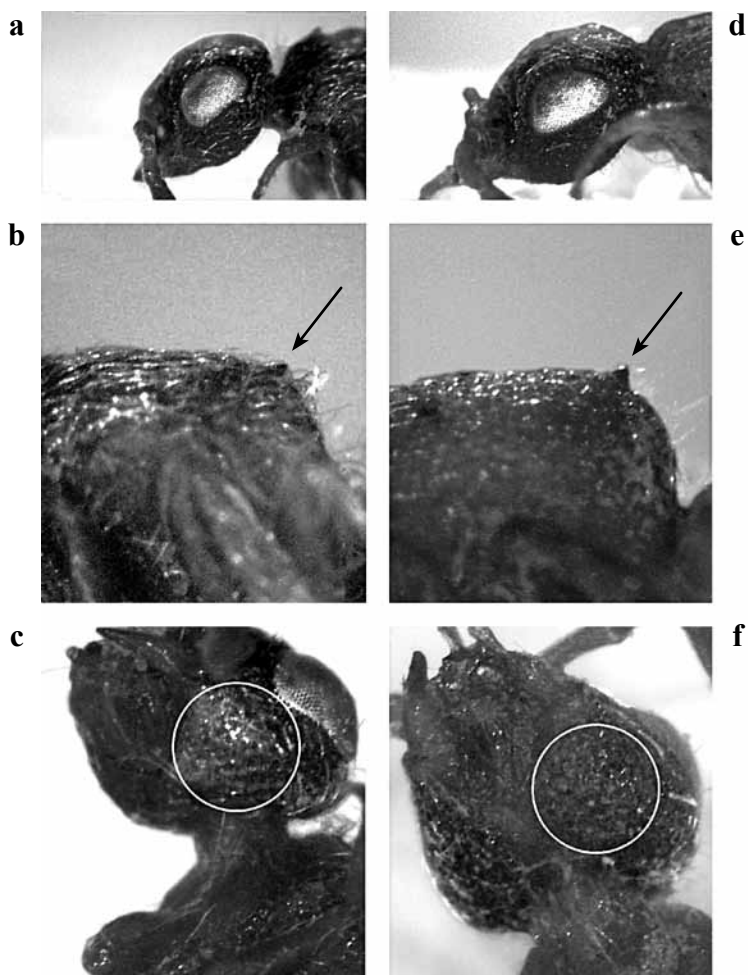


Fig. 3 – head, scutellar scale and punctuation of genae, respectively, of *P. romanoi* n. sp. (a, b, c) and *P. sericeiceps* (André, 1901) (d, e, f). Data of the compared specimen of *P. sericeiceps* as follows: Italy, Sardinia, Cagliari, stagno di Molentargius, VIII.1992, P. Leo legit (specimen from author's collection).

darkened, respectively, on the distal flagellomeres and on the basal part of femora and tibiae. Pubescence on vertex may be extended up to the frons or, conversely, sparsely occurring in some specimens. Surface of tergum 1 is sometime reddish; lateral spots of silvery-white setae on tergum 2 are often sparse or almost lacking in some specimens. The pygidial plate smooth is a quite constant character among the examined speci-



Fig. 4 – Known distribution of *Physetopoda romanoi* n. sp. (black circles) and *P. sericeiceps* (André, 1901) (black triangles) in the Iberian Peninsula; localities of *P. sericeiceps* are given according to Petersen (1988).

mens; some of these, however, have weak and irregular impressions on the middle of the pygidium as in fig. 2.

MALE. Unknown.

COMPARATIVE NOTES. *Physetopoda romanoi* n. sp. can be easily distinguished at first sight from species with different pattern of pubescence on tergum 2, such as those with three [*P. lampedusia* (Invrea, 1957), *P. trioma* (Invrea, 1955)] or more tergal spots [*P. punctata* (Latreille, 1792)], as well as from those characterized by propodeum strongly truncated [*Physetopoda halensis* (Fabricius, 1787), *P. lucasii* (Smith, 1855), *P. scutellaris* (Latreille, 1792), and again *P. punctata* (Latreille, 1792)], because its propodeal posterior face is gently sloping. The differences in mesosoma can also exclude its relationship with *P. fusculina* (Invrea, 1955), which has a cylindrical or sub-rectangular and more elongated shape; furthermore, metasoma is considerably different in *P. pusilla* (Klug, 1835), characterized by a typical barrel shape. *P. uncinata* (Lucas, 1849), for which a recent redescription is given by Pagliano & Stru-

mia (2007), differs from the new species mainly in the globular head, completely devoid of whitish pubescence, and in the matt appearance of the mesosoma, which is never darkened on the anterior margin. Finally, relationships with some north-African infra-specific taxa, whose taxonomic value must still be clarified [such as *P. punctata* ssp. *melanothorax* (André, 1901), *P. pusilla* ssp. *nigrithorax* (André, 1902), and *P. scutellaris* ssp. *nigrescens* (André, 1901)], can be excluded because these forms have been distinguished from the respective species just on the basis of differences in colour and pubescence patterns.

As evidenced in the diagnosis, *P. romanoi* n. sp. is morphologically comparable only with *P. sericeiceps* (André, 1901). This species differs in the shape of eyes and head, that from a lateral view is characterized by more prominent genae (fig. 3d); in the punctuation on genae, that is coarse and irregular (fig. 3f), while in the new species the surface is shiny and the punctuation is smaller and less evident (fig. 3c). Moreover, the scutellar scale of *P. sericeiceps* is salient and protruded above, forming an angle between its dorsal slope and the dorsal surface of mesosoma of about 120° (fig. 3e), while that of *P. romanoi* is more flattened, forming an almost plane angle (fig. 3b). According to Petersen (1988), *P. sericeiceps* is characterized by a slight variability between mainland and insular populations, as those from Corsica and Sardinia show a denser pubescent spot on the vertex, a wider pubescent band on tergum 2, and an overall reddish trend in colouration; therefore, specimens from mainland result less pubescent and with legs and antennae darker. Instead, the new species is instantly recognizable by the dense silvery-white pubescence covering head and mesosoma, as well as by the distinct dark band on the anterior margin, covered by long and recumbent black setae; although these characteristics have often little taxonomic value if considered alone, together with the morphological ones they help to further define the differences between the two species.

DERIVATIO NOMINIS. We are glad to dedicate the new species to our friend Marcello Romano, who is working since many years to clarify several unresolved issues of the family Mutillidae, wishing him to let us know soon the interesting results of his studies.

DISTRIBUTION. All the examined specimens (holotypus and paratypi) come from the region of Almería (SE Spain); the currently known distribution is shown in fig. 4.



BIOLOGY. Data from the labels of the examined specimens of *Physetopoda romanoi* n. sp. show a wide phenology, extended at least from March to September; other aspects of its biology are still unknown.

ACKNOWLEDGEMENTS. We would like to thank Carolina Martín and Mercedes París (MNCN) that allow us to study the important material from the Suárez' collection, and for their patient waiting; we are also grateful to our friend Marcello Romano, for his useful informations on mutillid's literature.

#### RIASSUNTO

*Una nuova specie di Physetopoda della Spagna sud-orientale (Hymenoptera, Mutillidae).*

Viene descritta *Physetopoda romanoi* n. sp. su alcuni esemplari di sesso femminile appartenenti alla collezione Suárez provenienti dalla Spagna sud-orientale. La nuova specie risulta affine a *P. sericeiceps* (André, 1901), dalla quale si distingue principalmente per la diversa conformazione della testa, degli occhi e dell'uniguicolo scutellare, e per la punteggiatura meno grossolana e fitta delle genae.

#### SUMMARY

*Physetopoda romanoi* n. sp. is described on the basis of female specimens collected on SE Spain and belonging to the Suárez' collection. The new species is closely related to *P. sericeiceps* (André, 1901), from which differs mainly in the shape of head, eyes and scutellar scale, as well as in the punctuation pattern on the genae.

#### REFERENCES

- ANDRÉ, E. 1899-1903. Species des Hyménoptères d'Europe & d'Algérie. Tome huitième. Les Mutillides. V. Dubosclard, Paris, X+468 pp., 15 tab.
- HOFFER, A. 1936. Diagnoses novae mutillidarum Cechosloveniae. Čas. Česke Spol. entomol., 33: 157-163.
- HUBER, J.T. & M.J. SHARKEY. 1993. Chapter 3. Structure, pp. 13-59. In: H. Goulet & J.T. Huber (eds.). Hymenoptera of the World: An Identification Guide to Families. Agriculture Canada Publ. 18894/E, Ottawa.
- INVREA, F. 1951. Mutillidi nuovi o notevoli del bacino mediterraneo (Hymenoptera - Mutillidae). II parte. Boll. Soc. entomol. ital., 81: 34-43.
- INVREA, F., 1964. Fauna d'Italia. V. Mutillidae-Myrmosidae. Calderini, Bologna, X+302 pp.
- LELEJ, A.S., 2002. Catalogue of the Mutillidae (Hymenoptera) of the Palaearctic region. Dalnauka, Vladivostok, 171 pp.
- LELEJ, A.S., L. STANDFUSS & K. STANDFUSS. 2003. To the knowledge of the mutillid wasps of Greece (Hymenoptera, Mutillidae). Entomofauna, 24(6): 121-140.
- MANTERO, G. 1909. Imenotteri dell'Isola dell'Asinara raccolti dal Sig. Silvio Folchini. Bull. Soc. entomol. ital., 41: 56-83.
- PAGLIANO, G. & F. STRUMIA. 2007. Contributo alla conoscenza dei Mutillidae italiani (Hymenoptera, Scolioidea). Boll. Mus. reg. Sci. nat. Torino, 24(1): 25-110.
- PETERSEN, B. 1988. The Palaearctic Mutillidae of I.C. Fabricius and some related material (Insecta, Hymenoptera, Aculeata). Steenstrupia, 14(6): 129-224.

