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Aphaenogaster muelleriana Wolf, 1915 (Hymenoptera Formicidae) in Salento (South East Italy)

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ABSTRACT Workers of the ant *Aphaenogaster muelleriana* Wolf, 1915 (Hymenoptera Formicidae) have been found in Salento (Apulia, South East Italy) for the first time. Also, this record represents the first citation for the Italian peninsular territory. New Italian localities for *A. splendida* species-group are given here.

KEY WORDS Ants; *Aphaenogaster muelleriana*; *A. ovaticeps*; *A. splendida*; first citation, Formicidae, Italy.

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INTRODUCTION

In July 2016 during my myrmecological researches in Salento (South Apulia) I had the chance to collect some specimens of the nocturnal *Aphaenogaster* (*Attomyrma*) *muelleriana* Wolf, 1915 (Hymenoptera Formicidae Myrmicinae Stenammini).

This Balkan ant species was up to now virtually unknown on the Italian mainland, having only two historical records reporting localities close to the Slovenian borders. The Salentinian specimens represent the first citation for Apulia and for the entire Italian peninsular territory.

MATERIAL AND METHODS

The specimens are stored in the following collections: ASPC: Antonio Scupola personal collection (Verona, Italy); CGPC: Christophe Galgowski personal collection (Saint-Aubin-de Médoc, France); ESPC: Enrico Schifani personal collection (Palermo, Italy); BMNH: The Natural History Museum of London U.K.; MSNM: Museo di Storia Naturale di Milano, Italy; MSNV: Museo di Storia Naturale di Verona, Italy; VGPC: Vincenzo Gentile personal collection (Napoli, Italy).

Measurements were taken by means of an ocular graticule mounted on Leica MB3 stereomicroscope at 60X magnification. The measures are express in mm; The following acronyms have been used: CL (cephalic length, measured from the anterior edge of the clypeus to the posterior border of the head); CW (maximum width of the head, measured immediately after the eyes); SC (scapus length, measured without the basal condyle); CI (cephalic index: CW/CL); CS (cephalic size: CW+CL/2).

RESULTS

Aphaenogaster* (*Attomyrma*) *muelleriana Wolf, 1915

EXAMINED MATERIAL. New data. Italy, Salento (Lecce Province, Apulia),Torre Vado, loc. Postu Vecchiu, 9–16.VII.2016, (at the base of a little wall near a house with garden), leg. A. Scupola; 15 workers.

DISTRIBUTION. Emery (1898) first mentioned the *Aphaenogaster muelleriana*, nevertheless without giving a formal description of it. Subsequently Emery (1914) cited as *A. ovaticeps* new subspecies, a series of workers from Cephalonia, but also in this case without providing a formal description. He writes: "*wird dr. K. Wolf, der die arbeiterin derselben bei Triest fand, unter dem namen subsp.* Mülleriana *beschreiben*". ["...Dr. K. Wolf describes the worker found in the surroundings of Trieste under the name subspecies *müllerianа*."].

Wolf (1915), finally, describes *A. ovaticeps* ssp. *muelleriana*, on a single specimen (Müller legit) from Castle of Miramare near Trieste.

After the original description, new specimens are signaled from Trieste (Finzi, 1922; Müller, 1923; Finzi, 1927) and Gorizia (Baroni Urbani, 1962). *A. muelleriana* is reported also from Slovenia (Bračko, 2007), Croatia (Zimmermann, 1935; Bračko, 2006), Bosnia and Herzegovina (Zimmerman, 1935), Serbia (Petrov & Collingwood, 1992), Montenegro (Zimmermann, 1935; Karaman, 1998), Albania (or Greece ?) (Pindo) (Emery, 1898 sub *A. ovaticeps*; Wolf, 1915; Emery, 1916, Finzi, 1927), Greece (Prevesa) (Emery, 1898 sub *A. ovaticeps*; Wolf, 1915); Corfu island (Finzi, 1927), Cephalonia island (Emery, 1914). The presence in Macedonia (Borowiec, 2014) is dubious (not confirmed by Karaman, 2009 and Bračko et al., 2014).

REMARKS. The systematic position of *A. muelleriana* is actually still unclear. This taxon for a long time has been considered only a subspecies of *A. ovaticeps* Emery, 1898, (endemic species from Liguria (North West Italy), as the differences found in the workers (head more slender and posterior much transverse, head surface more polish, propodeal spiny less developed) and found in the draws of the males (Wolf, 1915, based on the draws of Emery, 1898), were weak but constant.

Müller (1923) studied the particular populations of *A. ovaticeps* ssp. *muelleriana* from Split (loc. Castella) (Central Balkan). He noticed that at first sight, the specimens are convergent with *A. ovaticeps* s. str. (head opacity and form of the propodeal spiny), but in the same time, he found some differences in males and in particular in the workers (he compared the draws of Emery, 1908) (postpetiole lower in profile as in *A. muelleriana*, and head more slender respect to *A. ovaticeps* s. str.). Müller then considered these populations as a possible separate new subspecies (not described), besides affirms that the Albanian (Grecian ?) populations are probably co-specific with this new subspecies.

Finzi (1927) observed that the population of *A. ovaticeps* ssp. *muelleriana* from Trieste, differs from *A. ovaticeps* s. str. only for the brightness of the vertexal, since the morphology of the head and propodeal spiny are subject to intranidal variation. He notices, in particular, that a specimen of *A. ovaticeps* s. str. from Genoa, (collected by Mantero in the year 1911), has a typical short propodeal spiny, while a specimen of *A. muelleriana* from Trieste has a longer propodeal spiny compared to those of *ovaticeps* s. str. Finzi (1927) had not enough materials to solve this problem and he never took in consideration males reported from Pindo and Preveza (Greece).

Emery (1908) writes that the male of *A. ovaticeps* (sic!) (= *muelleriana* ?) from Pindo (Albania or Greece ?) has the wings "*gelblich*" (yellowish) and propodeal spiny less leaning, while the male from Genoa (f. typ.) has the wings "*farblos*" (colourless) and the propodeum more leaning. Finzi (1927), in every case, accepts "*sic et simpliciter*" the vision of Müller, and considers the three followings entities:

Aphaenogaster ovaticeps s. str. from Genoa (North West Italy: Liguria)

Aphaenogaster ovaticeps ssp. *muelleriana* from Trieste (North East Italy: East Friuli and North West Balcania)

Aphaenogaster ovaticeps n. ssp. of Müller, from southern Balkans (Split, Albania, North West Greece and Ionian islands).

Agosti & Collingwood (1987) raised *A. muelleriana* to *bona specie* without providing any further information.

Recently, Borowiec (2014) in contrast with the current opinion, considers the possible synonymy between *A. ovaticeps* s. str. and *A. muelleriana* s.l. (inclusive of the new subspecies of Müller). He writes "... *Materials from Corfu suggested that both taxa represent only forms of one species and nests with intermediate specimens were observed*".

Here, I retain useful to provide measurements from the different populations:

Aphaenogaster muelleriana 5 specimens from Salento, Torre Vado (ASCP)

CL	1.280	1.260	1.230	1.230	1.344
CW	1.02	0.944	0.944	0.928	1.024
SC	1.82	1.600	1.600	1.600	1.800
CI	0.797	0.749	0.767	0.754	0.762
CS	1.15	1.102	1.087	1.079	1.184

Aphaenogaster muelleriana 4 specimens from Greece: Aetolia, loc. Akamania (ASCP)

CL	1.232	1.216	1.248	1.072
CW	0.880	0.912	0.960	0.784
SC	1.600	1.600	1.600	1.440
CI	0.714	0.750	0.769	0.731
CS	1.056	1.064	1.104	0.928

Aphaenogaster ovaticeps 1 specimen from Wolf, 1915

CL	1.200
CW	0.905
CI	0.755

Aphaenogaster muellariana holotypus from Wolf, 1915

CL	1.250
CW	0.958
CI	0.766

Wolf's measures perfectly match with my data. In particular *A. muelleriana* fall perfectly into the ranges (min–max) of CI (0.75–0.80); CL (1.10–1.34) and CW (0.79–1.02). Same case for *A. ovaticeps*. This suggests that Borowiec could be right in considering all taxa as members of a single species. On the other hand I observed that the genus *Aphaenogaster* has the tendency to form allopatric species and endemisms, as underlined in the recent revision of the related *A. cecconii* species-group (Borowiec & Salata, 2014).

In this optics it is therefore possible that the vision of Müller could be correct and new synonymies premature. I think that only studies based on the males from all populations of the entire areal can clarify the situation.

Here I consider *Aphaenogaster* (*Attomyrma*) *muelleriana* a *bona species*, within the *A. splendida* species-group (sensu Böer, 2013).

A. muelleriana in Salento have a transadriatic origin as many other Apulian insects (for example the tenebrionid beetle *Dendarus caelatus* Brullé, 1832, common in West Greece but in Italy present only in Salento). These species are usually Balkan distributed with the separated presence in Italy in the North East (Friuli) and/or in the South East (Apulia) (Gridelli, 1958).

Figure 1. Head of worker of *Aphaenogaster muelleriana* from Torre Vado (Lecce, Italy).

Figure 2. Body of the worker of *Aphaenogaster muelleriana* from Torre Vado (Lecce, Italy).

Figure 3. Distribution of the species *Aphaenogaster ovaticeps* (yellow squares), *A. muelleriana* (red squares) and *A. splendida* (blue circles).

NEW DATA ON THE *A. SPLENDIDA* SPECIES-GROUP IN ITALY

Aphaenogaster splendida (Roger, 1859)

EXAMINED MATERIAL. New data. Campania. Praiano di Positano, 9.VII.1966, leg. Poldi, 1 worker (MSNM). Calabria. Reggio Calabria, centro città, 3/VI/04, leg. E. Sgrò, 1 worker (coll. Sgrò); Locri (camping), 1 gyne (dealate) (MSNM). Sicily. Altofonte (Palermo), IX.1963, leg. Genduso, 1 male (MSNM); Tre Mestieri Etneo (Catania), 21.VIII.1960, 1 gyne (MSNM); Catania, 7.VI.2005, leg. Strano, 2 workers, 1 gyne and 1 male (MSNM); Catania, 6.VII.2006, leg. Strano, 2 workers 1 male (ex coll. Sgrò) (ASCP); Catania, 29.V.1993, leg. Poldi, 1 worker (MSNM); Torretta Torra (Bosco della Ficuzza, Palermo) 940 m, X. 2005, leg. Gatto, 1 worker and 2 males (MSNM); Pedara Loc. Tarderia, Catania, 14.VI.1950, leg. Castellari, 1 worker (MSNM); Palermo, 14.IX.2016, leg. Schifani, 1 worker (ESPC).

DISTRIBUTION. Campania; Sicilia, Friuli, Lazio (Baroni Urbani, 1971); Pantelleria (Mei, 1995); Campania, Calabria (present paper).

REMARKS. The workers from Calabria differ from Catania specimens having propodeal spines slightly developed and differently oriented, different sculpture of the mesosoma and less hairy gaster. These differences are not sufficient to hypothesize a different form (Sgrò pers. comm.). On the other side, males of Greece (Aetolia) have a different propodeum profile, suggesting the existence of a different form respect to western Mediterranean populations.

Aphaenogaster ovaticeps Emery, 1898

EXAMINED MATERIAL. New data. Liguria. Chiavari, Genova, 10.VII. 2015, leg. S. Viale, 1 worker, 1 gyne and 1 male (VGPC).

DISTRIBUTION. Genoa (Baroni Urbani, 1971).

REMARKS. Species apparently endemic to Liguria (North West Italy). Collected first by Mantero (1898) but misidentified with *A. subterranoides*

Forel (see Emery, 1916) and subsequently described as new species by Emery (1898).

Aphaenogaster muellariana Wolf, 1915

EXAMINED MATERIAL. New data. Apulia. present paper. Veneto: Mestre-Venezia, 23.IX.1936, leg. Maura, 3 workers (MSNM); Venezia città, 5.VII.1991, 3 workers (MSNM); idem, 3.VIII.1953, 1 gyne (MSNM); 19.VII.1933, leg. Giordani Soika, 1 worker (MSNM); Venezia città, San Polo Portico, 7.VI.1973, leg. Poldi, 1 worker (MSNM).

DISTRIBUTION. Eastern Friuli (Baroni Urbani, 1971), Veneto, Apulia (present paper).

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