

Research articleSubmitted: September 2nd, 2018 - Accepted: November 29th, 2018 - Published: December 31st, 2018**Review of the distribution of Sapygidae in Italy and new records (Hymenoptera: Vespoidea)**Filippo CECCOLINI¹, Fabio CIANFERONI^{1,2,*}¹ Natural History Museum of the University of Florence, Zoological Section "La Specola" - Via Romana 17, I-50125 Florence, Italy
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Abstract

The distribution of the Italian species of Sapygidae is reviewed and new occurrence records for some species are given. *Monosapyga clavicornis* (Linnaeus, 1758) is recorded for the first time in Lazio and Abruzzo, *Polochrum repandum* Spinola, 1806 in Abruzzo, and *Sapygina decemguttata* (Jurine, 1807) in Veneto. Due to insufficient sampling efforts in Italy, all the Italian species of Sapygidae should be currently considered as Data Deficient (DD) according to the IUCN Red List Categories and Criteria.

Key words: Sapygidae, Italy, faunistics, new records, IUCN categories of risk.**Introduction**

The family Sapygidae is a small group of either ectoparasitoids or cleptoparasites (mainly of Apoidea) wasps, including about 70 species in the world (van Achterberg 2014; Fernández & Sarmiento 2015) and 33 in the Palaearctic region (cf. Kurzenko & Gusenleitner 1994; Gusenleitner 1996, 1997). In Italy only five species occur (Pagliano 1995) but distribution data are still scarce (Pagliano 1984; Ceccolini & Pizzocaro 2014), despite the more abundant records reported for some surrounding countries [e.g. Gusenleitner & Gusenleitner (1994) for Austria and Amiet (2008) for Switzerland]. Here the distribution of the Italian species of Sapygidae is reviewed and new records for this neglected group are also given.

Material and methods

For each site, the following information is provided: locality, date, collector or photographer, number of specimens, repository or source. For each species, records are listed geographically from north to south and name places are maintained in Italian; moreover information about biology and distribution in Italy is also given.

Each record was identified or confirmed by the authors and georeferenced. Geographical coordinates, in square brackets, are in decimal degrees (datum WGS84). The uncertainty (in metres) of data is indicated according to the point-radius method (Wieczorek et al. 2004).

The nomenclature adopted follows Generani et al. (2005). Existing synonymies used in the references quoting Italian records are reported under the accepted name.

Abbreviations used in material examined:

MZUF	Natural History Museum of the University of Florence, Italy.
CEM	Collection Enrico Migliaccio c/o MZUF.
EI	www.entomologiitaliani.net
NM	www.naturamediterraneo.com
loc.	locality
un	uncertainty

Species account*Sapyga quinquepunctata* (Fabricius, 1781)*Sapyga punctata* Klug, 1803*Sapyga pacca* (Fabricius, 1787)

MATERIAL EXAMINED. **Marche:** Pesaro (Pesaro and Urbino), Baratoff, [43.88849° N 12.91298° E (un = 1000 m)], 15.VI.2011, 1 ♀, photo by Marco Paglialunga (EI). **Lazio:** Roma, via di Macchia Madama, [41.93141° N 12.45089° E (un = 200 m)], 8.V.1946, A. Cotta legit, 1 ♀, G. Pagliano det., 1995, CEM; Roma, loc. Castelfusano, [41.71759° N 12.33069° E (un = 2000 m)], 19.IV.2015, 1 ♀, photo by Giuseppe Pace (EI); Viterbo, Valle dell'Arcionello, [42.40709° N 12.14516° E (un = 1500 m)], 12.VI.2013, 1 ♂, photo by Marco Selis (EI). **Abruzzo:** Abruzzo National Park (L'Aquila), Sangro riverside, [41.96424° N 13.74613° E (un = 15000 m)], 1000 m, 26.VI-27.VII.2001,

P. Tollis legit, 1 ♀, T. Ljubomirov det., 2005. **Sicilia:** Ragusa province, [36.93062° N 14.70543° E (un = 35000 m)], 200 m, 11.IV.2010, 1 ♀, photo by Achille Francesco De Sanctis (NM).

Biology. The species is a parasite of the genera *Heriades*, *Megachile*, *Osmia*, *Hylaeus*, and *Hoplitis* (see Fabre 1886; Pate 1947; Grandi 1951, 1961; Bonelli 1972; Priore 1987; Westrich 1990; Kofler 1998; Pagliano & Scaramozzino 1999).

Regional distribution in Italy. Valle d'Aosta, Piemonte, Lombardia, Trentino-Alto Adige, Veneto, Liguria, Emilia-Romagna, Toscana, Marche, Lazio, Abruzzo, Molise, Campania, Puglia, Basilicata, Sicilia, Sardegna (see Spinola, 1806; Disconzi 1865; Kohl 1880, 1888; Magretti 1881; Costa 1887; De Stefani Perez 1887, 1888, 1895; Cobelli, 1891, 1903; Friese 1926; Grandi 1934, 1935, 1962; Zangheri 1969; Bonelli 1971, 1972; Erlandsson 1974; Pagliano 1984, 1995; Hellrigl 1996; Kofler 1998; Turrisi 1999; Generani et al. 2005; Pagliano et al. 2008; Strumia 2010; Ceccolini & Pizzocaro 2014); quoted only as "Italie" by Casolari & Casolari Moreno (1980).

Remarks. The new records add to the faunistic knowledge of this species for which only scattered records were published so far. In particular only single records were known for Marche and Abruzzo and two records for Latium (cf. Generani et al. 2005).

***Sapyga similis* (Fabricius, 1793)**

Sapyga rufipes Costa, 1864

Biology. The species is a parasite of some species of the genus *Osmia* (Westrich 1990; Pagliano et al. 2008).

Regional distribution in Italy. Piemonte, Trentino-Alto Adige, Toscana, Lazio, Abruzzo, Sardegna (see Kohl 1880, 1888; Costa 1864, 1887; Friese 1926; Grandi 1935; Wolf 1971; Pagliano 1984; Hellrigl 1996, 2004; Generani et al. 2005; Pagliano et al. 2008; Ceccolini & Pizzocaro 2014).

***Monosapyga clavicornis* (Linnaeus, 1758)**

Sapyga clavicornis (Linnaeus, 1758)

Sapyga prisma Vander Linden, 1827

MATERIAL EXAMINED. **Toscana:** Arezzo, Castelfranco Pindiscò, Faella, [43.62645° N 11.51770° E (un = 700 m)], 28.IV.1862, 2 ♀, MZUF, "552. || Sapyga | prisma ♀ | Parasita [sic] della | chelostoma | maxillosum ♀. || a Faella nel Valdarno | Superiore. Presa | sopra una trave | ove erano molti | bruchi prodotti dalla | chelostoma| maxillosum ♀. | 28 aprile 1862" [= collected at Faella, upper Arno river Valley, on a wood beam, associated with several caterpillars of *Chelostoma maxillosum*]. **Lazio:** Roma, Nettuno, Bosco del Foglino [= Foglino's Forest], [41.46845° N 12.71787° E (un = 1500 m)], 1.V.2014, 1 ♂, photo by Giuseppe Pace (EI). **Abruzzo:** Abruzzo National Park (L'Aquila), Sangro riverside, [41.96424° N 13.74613° E (un = 15000 m)], 1000 m, 26.VI-27.VII.2001, P. Tollis legit, 1 ♀, T. Ljubomirov det., 2005.

Biology. The larva develops on nests of *Chelostoma florissomne* (Linnaeus, 1758) and of species of the genus *Osmia* and *Heriades* (see van Lith 1957; Brechtel 1986; Jacobs & Renner 1974; Westrich 1990; Kofler 1998).

Regional distribution in Italy. Piemonte, Liguria, Veneto, Trentino-Alto Adige, Emilia-Romagna, Toscana, Calabria, Sicilia (see Costa 1887; Kohl 1888; Grandi 1935, 1962; Pagliano 1984; Kofler 1998; Turrisi 1999; Hellrigl



Fig. 1 – One drawer of the Rondani collection containing Sapygidae (preserved in the Natural History Museum of the University of Florence): overall view (left) and detail of the three specimens of *Polochrum repandum* (right) (photo by Fabio Cianferoni).



Fig. 2 – *Sapygina decemguttata* from Monfenera, Treviso (photo by Gianni Desti Baratta).

2004; Generani et al. 2005; Pagliano et al. 2008); quoted only as “Italie” by Casolari & Casolari Moreno (1980).

Remarks. First record for Lazio and Abruzzo. The species was generically quoted for Toscana by Pagliano et al. (2008); here a record with precise locality for this region is given. Since the oldness of the latter record, a confirmation would be needed.

***Polochrum repandum* Spinola, 1806**

MATERIAL EXAMINED. **Lazio:** Viterbo [42.43641° N 12.11360° E (un = 30 m)], 22.IV.2013, 1 specimen, photo by Marco Selis (EI); Roma, [41.90278° N 12.49636° E (un = 13000 m)], 22.V.2007, 1 ♀, photo by Alessandro Iacopelli (NM). **Abruzzo:** L’Aquila, Introdacqua, Monte Playa, [42.00783° N 13.89821° E (un = 1000 m)], 700 m, on *Corylus avellana* L., 29.I.2018, photo provided by Maurizio Biondi.

Biology. *Polochrum repandum* is a parasite of *Xylocopa violacea* (Linnaeus, 1758) (Gené 1842; Morawitz 1889; Grandi 1951; Bajari 1953).

Regional distribution in Italy. Piemonte, Veneto, Liguria, Emilia-Romagna, Toscana, Lazio, Molise, Puglia (see Spinola 1806; Vander Linden 1827; Disconzi 1865; Conzarini 1843; Costa 1887; Grandi 1934, 1962; Casolari & Casolari Moreno 1980; Pagliano 1984; Vicidomini 1998; Generani et al. 2005; Pagliano et al. 2008; Strumia 2010).

Remarks. First record for Abruzzo. Moreover we examined further three specimens of this species, unfortunately

without any label indication, from the Camillo Rondani’s collection preserved in MZUF (Fig. 1).

***Sapygina decemguttata* (Jurine, 1807)**

Scolia 8-punctata Rossi, 1792

Sapyga cylindrica (Schenck, 1857)

MATERIAL EXAMINED. **Piemonte:** Torino [45.07031° N 7.68685° E (un = 10000 m)], 1862, “Ispettore Forestale” [= forestry inspector] legit, 4 ♂♂, 3 ♀♀, and 2 ♂♂ without further data but very likely originating from the same lot (MZUF). **Veneto:** Treviso, Pederobba, Monfenera [45.88394° N 11.93624° E (un = 1000 m)], 80 m, 27.VI.2011, 1 ♀, photo by Gianni Desti Baratta (EI e NM). **Marche:** Pesaro (Pesaro and Urbino), Baratoff, [43.88849° N 12.91298° E (un = 1000 m)], 16.VI.2011, 1 ♀, photo by Marco Paglialonga (EI).

Biology. The species is cleptoparasite of *Gymnomerus laevipes* (Shuckard, 1837) (Berland 1925), *Heriades crenulatus* Nylander, 1856 (Grandi 1961), *H. truncorum* (Linnaeus, 1758) (Westrich 1990; Kofler 1998), and others hymenopterans (Pagliano et al. 2008).

Regional distribution in Italy. Valle d’Aosta, Piemonte, Trentino-Alto Adige, Liguria, Emilia-Romagna, Toscana, Marche, Umbria, Lazio, Abruzzo, Puglia (see Rossi 1792; Kohl 1880; Costa 1887; Friese 1926; Grandi 1935; Erlandsson 1974; Pagliano 1984; Kofler 1998; Hellrigl 2004; Generani et al. 2005; Pagliano et al. 2008; Strumia 2010).

Remarks. First record for Veneto. A single record was quoted by Erlandsson (1974) for Marche.

Discussion

The distribution of the Italian species of Sapygidae is reviewed and new records for four of the five species occurring in Italy are provided. *Monosapyga clavicornis* (Linnaeus, 1758) is reported for the first time in Lazio and Abruzzo, *Polochrum repandum* Spinola, 1806 in Abruzzo, and *Sapygina decemguttata* (Jurine, 1807) in Veneto.

The knowledge about the distribution of this family in Italy is still scarce due mainly to undersampling. The available data on this group is not sufficient to establish if these wasps are effectively rare, even if it is to highlight that in an adjacent country like Austria a large number of records is available compared to Italy (Gusenleitner & Gusenleitner 1994) although the reference area is smaller and exhibiting a lower variety of ecosystems. However, being the information about distribution of these species still inadequate to make an assessment, all the Italian species of Sapygidae should be currently considered as Data Deficient (DD) according to the IUCN Red List Categories and Criteria (IUCN 2012).

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