Sapienza Museum Centre
Zoological Museum
https://rosa.uniroma1.it/fragmenta_entomologica

Insect Molecular Systematics Lab.

Fragmenta entomologica

Department of Biology and Biotechnology "C. Darwin"

University Press

Sapienza Università Editrice

Fragmenta entomologica, 53 (1): 9–12 (2021)

eISSN: 2284-4880 (online version)
pISSN: 0429-288X (print version)

Short scientific note
Submitted: October 13th, 2020 – *Accepted*: February 28th, 2020 – *Published*: March 15th, 2021
DOI: 10.13133/2284-4880/454

On two rare Italian *Palliduphantes*, including the description of a new species (Araneae: Linyphiidae)

Robert BOSMANS[1], Alessio TROTTA[2,*]

[1]*Terrestrial Ecology Unit, Ledeganckstraat 35, B–9000, Gent, Belgium* - rop_bosmans@telenet.be
[2]*Via delle Ginestre 1/A2, I-17024, Finale Ligure (SV), Italy* - alessiotrotta1973@libero.it
* Corresponding author

Abstract
Male and female sexes of *Palliduphantes petruzzielloi* **sp. n.** are described from the Grotta Strazzatrippa in Campania, southern Italy. A new southernmost Italian locality of *Palliduphantes istrianus* is also given from Campania.

Key words: Cave spiders, Campania, new species, distribution.

urn:lsid:zoobank.org:pub: 2DE8C265-5B3C-4910-BF1F-D663B0DB4770

Introduction

Since the genus *Lepthyphantes* has been split into several new genera (e.g. Saaristo & Tanasevitch 2001), the number of newly described species on this genus keeps rising. New descriptions are well documented, but identifying specimens remains difficult, because for many of the species formerly described the quality of diagnostic drawings is poor or even lacking. Moreover, knowledge about distribution needs improvements, also in relation to changes due to current climate shift.

Palliduphantes species are often found in caves. When speleologists do research in caves and hand collected spiders to arachnologists, their identification can often be a difficult task, as only juveniles, or representatives of only one sex, are often collected. In this contribution, we report information about one rare species of *Palliduphantes* and a new species of the same genus, collected in caves in Campania (Southern Italy) by L. Petruzziello.

The genus *Palliduphantes* Saaristo & Tanasevitch, 2001 currently counts 73 species (World spider Catalogue 2020). According to Pantini & Isaia (2019), 15 species of this genus are currently reported in Italy: *Palliduphantes alutacius* (Simon, 1884), *P. angustiformis* (Simon, 1884), *P. antroniensis* (Schenkel, 1933), *P. byzanthinus* (Fage, 1931), *P. carusoi* (Brignoli, 1979), *P. conradini* (Brignoli, 1971), *P. florentinus* (Caporiacco, 1947), *P. insignis* (O. Pickard.-Cambridge, 1913), *P. garganicus* (Caporiacco, 1951), *P. istrianus* (Kulczyński, 1914), *P. liguricus* (Simon, 1929), *P. longiseta* (Simon, 1884), *P. montanus* (Kulczyński, 1898), *P. pallidus* (O.P.-Cambridge, 1871) and *P. salfii* (Dresco, 1949). Another possible species that could be transferred to *Palliduphantes* is *Lepthyphantes messapicus* Caporiacco, 1939, as suggested by Pantini & Isaia (2019).

In this paper we report the record of *Palliduphantes istrianus* for caves in Campania and the description of a new species found in the same area by L. Petruzziello.

Abbreviations

AM, AL, PM, PL: anterior median, anterior lateral, posterior median and posterior lateral eyes.
CRB: (Robert Bosmans collection)
Fe, Pa, Ti, Mt, Ta: Femur, patella, tibia, metatarsus, tarsus.
MCSNV: Museo civico di Storia naturale, Verona, Italy.

Genus *Palliduphantes* Saaristo & Tanasevitch, 2001

Type species: *Lepthyphantes pallidus* (O. Pickard-Cambridge, 1871).

***Palliduphantes petruzzielloi* sp. n.**
urn:lsid:zoobank.org:act:CEC1197F-6077-44E2-9AF8-624E66BF830E
(Figs 1a–j, 2a–e)
Type material examined. Holotype ♂, **ITALY**: Campania, Salerno province, Acerno, Grotta Strazzatrippa [Strazzatrippa

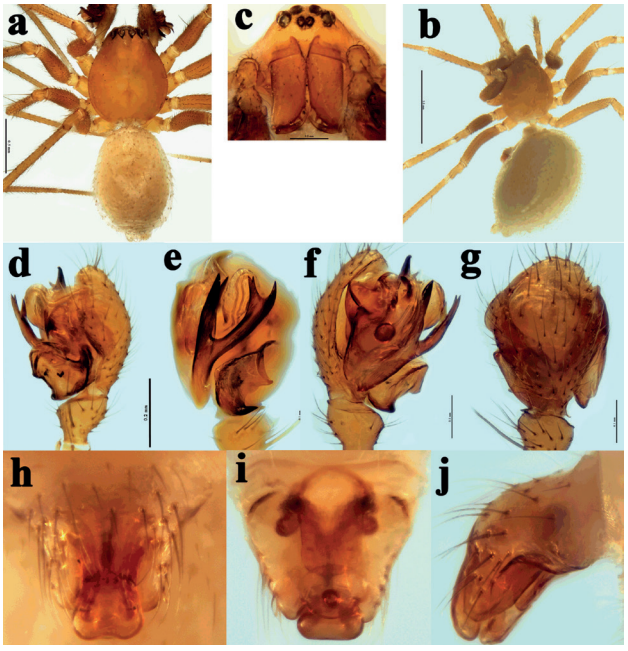

Fig. 1 – *Palliduphantes petruzzielloi* **sp. n. a**, holotype male, habitus in dorsal view; **b**, female paratype, habitus in dorsal view; **c**, holotype male, prosoma in frontal view; **d**, holotype male, palp, retrolateral view; **e**, *idem*, ventral view; **f**, *idem*, prolateral view; **g**, *idem*, dorsal view; **h**, female paratype, epigyne, ventral view; **i**, *idem*, dorsal view; **j**, *idem*, lateral view. Scale bars: a= 0.5 mm; b =1 mm; c= 0.2 mm; d–j =0.2 mm.

cave] (N40°45'45" E15°06.0084), 1125 m, 28.XII.2015, L. Petruzziello leg.; paratypes: 3 ♂♂, 1 ♀, same data as holotype; holotype and paratypes deposited in MCSNV (abdomen of female paratype accidently lost after making photos and drawings).

Diagnosis. Males are easily distinguished from other *Palliduphantes* species by the unique disposition of the 5 sharply pointed terminal teeth of the *lamella caracteristica* as seen in ventral view (Fig. 1e). The epigyne of the female resembles that of *P. pallidus*, but in this species the scape is much more flattened in lateral view and the dorsal plate is as long as wide, twice as long as wide in *P. petruzzielloi* **sp. n.** (Figs 1i, 2d).

Description. *Measurements* (mm): Male (n=4): Total length 1.9–2.0; prosoma 0.81–0.83 long, 0.70–0.71 wide. Female (n=1): Total length 2.2; prosoma 0.89 long, 0.72 wide.

- *Colour*: Prosoma, sternum and legs pale yellow; eyes with narrow black rings in males, missing in the single female; diameter.
- *Eyes*: AM separated by 1/4 their diameter, from the AL by the diameter of the AL; PM separated by their diameter, from the PL by 3/4 their diameter.
- *Chelicerae* with about 20 stridulating ridges; fang groove with 3 large promarginal and 5 small, closely set retromarginal teeth.
- *Spination*: Fe I with one prolateral spine; Tibiae I–II with 2 dorsal and 1 retrolateral spine, Ti III–IV only with the two dorsal spines; metatarsi I with 1 dorsal spine; spines long, twice as long as the diameter of the tibia; position of trichobothrium on metatarsus I at 0.17–0.19.
- *Male palp* (Figs 1d–g, 2 a–b): Patella and tibia each with one large dorsal spine, the one on the tibia somewhat longer; proximal branch of paracymbium with 1 median and 1 basal tooth, median part with one small tooth; lamella caracteristica with two prongs, the ventral one terminally bifid, the dorsal one on its tour split into two prongs, the dorsal one ending in a sharp tooth, the ventral one terminally bifid (fig. 1e)
- *Epigyne* (Figs 1h–j, 2 c–e): Strongly raised, with curved scape accompanied by rounded lateral lobes, terminally with rounded stretcher; dorsal plate rectangular, elongated, two times wider than long.

Geographic distribution. Only known from the type locality.

- ***Palliduphantes istrianus* (Kulczyński, 1914)**
- (Figs 3a–k)

Lephthyphantes [sic!] *istrianus* Kulczyński, 1914:
363, pl. 16, figs 9–10 (descr. ♀); Polenec & Thaler 1980:
106, figs 8–15 (descr . ♂♀); Deeleman-Reinhold 1986:
42, figs 1c–d, 10–15 (descr. ♂♀).
Lephthyphantes [sic!] *serratistylus* Roewer, 1931:
8, figs 5–6 (descr. ♂♀).
Lepthyphantes slivnensis Drensky, 1931:
16, 44, fig. 2 (descr. ♂).
Lepthyphantes strandi Kolosváry, 1934:
10, figs 2–4 (descr. ♂).
Lepthyphantes korculensis Miller, 1978:
60, pl. III, figs 1–7 (descr. ♀).
Palliduphantes istrianus; Saaristo & Tanasevitch 2001:
6, fig. 2E

Comments. *Palliduphantes* species are generally hard to identify. Valuable diagnostic characters are represented, in

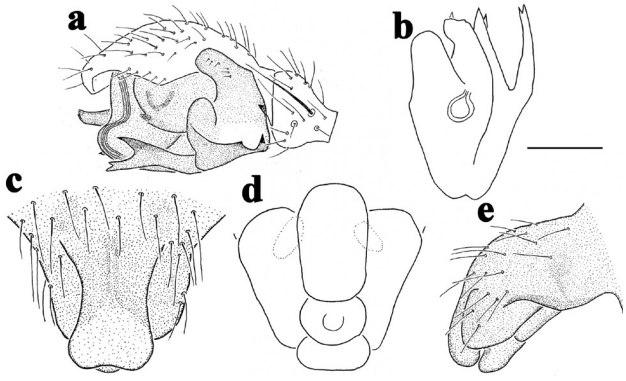

Fig. 2 – *Palliduphantes petruzzielloi* **sp. n. a**, holotype male, palp, retrolateral view; **b**, *idem,* embolic division, prolateral view; **c**, female paratype, epigyne, ventral view; **d**, *idem*, dorsal view; **e**, *idem*, lateral view. Scale bar: a–e: 0.18 mm.

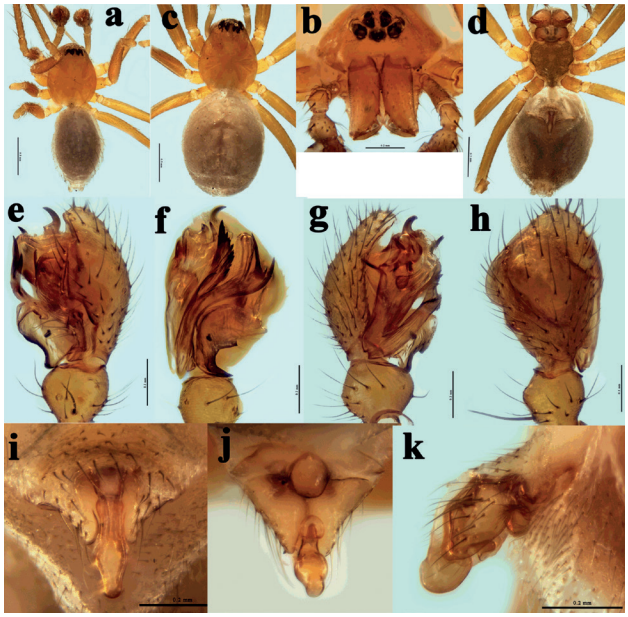

Fig. 3 – *Palliduphantes istrianus* (Kulczyński). **a**, male, dorsal view; **b**, *idem*, frontal view; **c**, female, dorsal view; **d**, *idem*, ventral view; **e**, male palp, retrolateral view; **f**, *idem*, ventral view; **g**, *idem*, prolateral view; **h**, *idem*, dorsal view; **i**, epigyne, ventral view; **j**, *idem*, dorsal view; **k**, *idem*, lateral view. Scale bars: a, c–d: 0.5 mm; e–h: 0.1 mm; b, i–k: 0.2 mm.

males, by the serrated terminal apophysis in the embolic division of the male palp, and, in females, by the shape of the triangular distal part of the scape of the epigyne. In respect to this general pattern, *P. istrianus* is an exception, as specimen are characterized by high intraspecific variability of these characters, which could explain the long list of synonyms in its taxonomy (World Spider Catalog 2020). In fact, this species has been described under 5 different names: *Lepthyphantes istrianus* Kulczyński, 1914 from Grotta delle Druse (NE Italy, Sgonico, Trieste province), *L. serratistylus* Roewer, 1931 from Grotta dei Colombi (Gabria jama) near Basovizza (NE Italy, Trieste province), *L. slivnensis* Drensky, 1931 from Bulgaria, *L. strandi* Kolosváry, 1934 from Hungary and *L. korculensis* Miller, 1978 from Croatia. All these taxa are pale yellowish to whitish, and mostly collected in caves, but, as is often the case in several other troglophilic arthropods, *Palliduphantes istrianus* actually exhibits a large geographic range. In more recent times, two excellent redescriptions of this species were published by Polenec & Thaler (1980) and by Deeleman-Reinhold (1986).

Material examined. ITALY: Campania (Avellino province), Montella, Grotta del Caprone (N40°48'17.98" E15°00'22.88"), 835m, 1 ♂, 31.XII.2015, 2 ♀♀, 6.VIII.2018, 1 ♂, 1 ♀, 6.VIII.2019, L. Petruzziello leg. (CRB).

Previous Italian records [*grotta* = cave; *pozzo* = karstic deep well]. **ITALY**: **Friuli Venezia Giulia,** Trieste province, Carso Triestino, Grotta delle Druse (Kulczyński 1914, as *Lephthyphantes* [sic!]; Polenec & Thaler 1980; Gasparo 1995; Gasparo & Thaler 2000); Grotta dei Colombi (Gabria jama) near Basovizza (Roewer 1931, as *Lephthyphantes* [sic!] *serratistylus* Roewer; Gasparo & Thaler 2000); Pozzo dei Colombi near Bassovizza (Roewer 1931; Polenec & Thaler 1980; Gasparo & Thaler 2000); Duino-Aurisina, Grotta della Fornace (Gasparo & Thaler 2000); Duino-Aurisina, Grotta A. F. Lindner (Gasparo & Thaler 2000); Duino-Aurisina, found in a cave east of Aurisina (Gasparo & Thaler 2000); San Servolo near Trieste (Roewer 1931); San Dorligo della Valle, Grotte delle Gallerie (Gasparo 1993; Gasparo & Thaler 2000); Sgonico, Grotta C. Doria (Gasparo & Thaler 2000); Sgonico, Grotta Gigante (Gasparo 1998; Gasparo & Thaler 2000); Sgonico, Grotta Romana (Gasparo & Thaler 2000). **Veneto:** Venezia province, Venezia, urban park (Hansen 1995); *ibidem*, S. Giorgio Island, Parco Fondazione Cini (Hansen 1996); municipality of Marghera, overwhelmed case near Fusina (Celano & Hansen 1999). **Emilia Romagna**: Forlì-Cesena province, Forlì, San Martino di Villafranca (Paoletti et al. 1993). **Toscana**: Pisa province, Monte Pisano area (Picchi 2020). **Lazio**: Viterbo province, olive grove near Viterbo (Thaler & Zapparoli 1993).

Geographic distribution. Italy, Slovenia, Croatia, Bosnia-Hercegovina, Montenegro, Hungary, Serbia, Bulgaria, Romania, Ukraine, Greece. In Italy, the species was so far recorded from the Northern and central parts of the country. The above cited locality represents the first record for Southern Italy.

Acknowledgements – Luigi Petruzziello [Remedello, Italy] collected all the material and is here thanked for sending it to us for study. Pierre Oger took care of the excellent photos.

References

Celano V., Hansen H. 1999. La carabidofauna e l'aracnofauna di una bonifica della laguna di Venezia. Bollettino del Museo civico di Storia naturale di Venezia, 49 (1998): 55–97.

Deeleman-Reinhold C.L. 1986. Contribution à la connaissance des *Lepthyphantes* du groupe *pallidus* (Araneae, Linyphiidae) de Yougoslavie, Grèce et Chypre. Mémoires de Biospéologie, 12 (1985): 37–50 [publ. in April 1986].

Gasparo F. 1993. La fauna, p. 19. In: AA.VV. La Grotta delle Gallerie 420 VG. Commissione Grotte "E. Boegan" ed., Trieste: 1–24.

Gasparo F. 1995. La fauna delle grotte e delle acque carsiche sotterranee della Venezia Giulia, stato delle ricerche e checklist delle specie cavernicole. Atti e Memorie della Commissione Grotte "E. Boegan", Trieste, 32: 17–42.

Gasparo F. 1998. La fauna della Grotta Gigante (Carso triestino, Italia). Atti e Memorie della Commissione Grotte "E. Boegan", Trieste, 35: 43–62.

Gasparo F., Thaler K. 2000. I ragni cavernicoli della Venezia Giulia (Italia nord-orientale) (Arachnida, Araneae). Atti e Memorie della Commissione Grotte "E. Boegan", Trieste, 37: 17–55.

Hansen H. 1995. Über die Arachniden-Fauna von urbanen Lebensraumen in Venedig-III. Die epigäischen Spinnen eines Stadtparkes (Arachnida: Araneae). Bollettino del Museo civico di Storia naturale di Venezia, 44 (1993): 7–36.

Hansen H. 1996. Über die Arachniden-Fauna von urbanen Lebensraumen in Venedig-IV. Die epigäischen Spinnen der Insel S. Giorgio Maggiore (Arachnida: Araneae). Bollettino del Museo civico di Storia naturale di Venezia, 46 (1995): 123–145.

Pantini P., Isaia M. 2014. Checklist of the Italian spiders (Version December 2014). On line at: http://www.museoscienzebergamo.it/

Pantini P., Isaia M. 2019. Araneae.it: the online Catalog of Italian spiders with addenda on other Arachnid Orders occurring in Italy (Arachnida: Araneae, Opiliones, Palpigradi, Pseudoscorpionida, Scorpiones, Solifugae). Fragmenta entomologica, 51 (2) : 127–152. Online at www.araneae.it, accessed on 15 September 2020.

Paoletti M.G., Favretto M.R., Bressan M., Marchiorato A., Babetto M. 1993. Biodiversità in pescheti forlivesi, pp. 33–80. In: Paoletti M.G., Favaretto M.R., Nasolini T., Scaravelli D., Zecchi T. (eds), Biodiversità negli agrosistemi. Osservatorio agroambientale Cesena, 159 pp.

Picchi M.S. 2020. Spiders (Araneae) of olive groves and adjacent semi-natural habitats from central Italy. Arachnologische Mitteilungen / Arachnology Letters, 60: 1–11.

Polenec A., Thaler K. 1980. Zwei wenig bekannte Deckennetzspinnen Südost-Europas: *Centromerus vindobonensis* Kulczyński und *Leptyphantes istrianus* Kulczyński (Arachnida: Araneae: Linyphiidae). Senckenbergiana biologica, 61 (1/2): 103–111.

Roewer C.F. 1931. Arachnoideen aus südostalpinen Höhlen gesammelt von Herrn Karl Strasser in den Jahren 1929 und 1930. Mitteilungen über Höhlen- und Karstforschung, 1931: 1–17.

Saaristo M.I., Tanasevitch A.V. 2001. Reclassification of the *pallidus*-, *insignis*- and *spelaeorum*-groups of *Lephthyphantes* Menge, 1866 (sensu lato) (Arachnida: Araneae: Linyphiidae: Micronetinae). Reichenbachia, 34: 5–17.

Thaler K., Zapparoli M. 1993. Epigeic spiders in a olive-grove in central Italy (Araneae). Redia, 76 (2): 307–316.

World Spider Catalog 2020. World Spider Catalog. Version 21.0. Natural History Museum Bern, online at http://wsc.nmbe.ch [accessed on 10 June 2020]. Doi: 10.24436/2