

First record of the harvestman *Dicranopalpus ramosus* from Italy (Arachnida, Opiliones: Phalangioidea)

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Abstract. We report the first findings of the harvestman *Dicranopalpus ramosus* (Simon, 1909) for Italy, from Lago dei Due Uomini (Calabria, Cosenza) at 1100 m a.s.l. and from the vicinity of the cave Grotta dei Ladroni (Sicily, Catania) at 1150 m a.s.l. The morphological characters of the species are provided and the possible provenience of the populations is discussed. An updated European distribution map based on literature and unpublished records shows the continuous expansion of the species northward as well as eastwards, north of the Alps. The new findings considerably extend its known range and raise the number of Italian harvestman species to 138.

Keywords: biogeography, faunistic record, Mediterranean fauna, montane habitats, species distribution

Zusammenfassung. Erster Nachweis des Weberknechts *Dicranopalpus ramosus* in Italien (Arachnida, Opiliones: Phalangioidea). Die ersten Funde des Weberknechts *Dicranopalpus ramosus* aus Italien werden präsentiert. Diese stammen von Lago dei Due Uomini (Kalabrien, Cosenza) gelegen auf 1100 m, sowie von der Umgebung der Höhle Grotta dei Ladroni (Sizilien, Catania), gelegen auf 1150 m. Die morphologischen Merkmale der Art werden dargestellt sowie eine mögliche Herkunft der Populationen diskutiert. Eine aktualisierte europäische Nachweiskarte basierend auf Literatur- sowie unpublizierten Nachweisen zeigt eine kontinuierliche Ausbreitung der Art nach Norden und Osten nördlich der Alpen. Der neue Nachweis erweitert erheblich das bekannte Verbreitungsgebiet der Art und erhöht die Anzahl der aus Italien bekannten Weberknechtarten auf 138.

The genus *Dicranopalpus* Doleschall, 1852 belongs to the superfamily Phalangioidea Latreille, 1802 and currently contains 13 extant species that inhabit mountainous areas in the Mediterranean, the Alpine and Carpathian regions. Most researchers include the genus in Phalangiidae Latreille, 1802, although formally it has no family assignment and is provisionally placed in the so-called *Dicranopalpus* group (Crawford 1992, Pinto-da-Rocha & Giribet 2007). Recently, a placement in Gyinae (Phalangiidae) has been proposed (Kury & Pham 2025). *Dicranopalpus ramosus* (Simon, 1909) was described from Morocco. The species has been recorded from France and England from 1967 and onward, and has invasively spread across Western-European countries during the last few decades (Fig. 3, distribution summarized in Wijnhoven & Prieto 2015, Martens 2021, additional records from iNaturalist 2025), with northern finds in Denmark and Sweden, and eastwards into Poland (Szymański et al. 2024), Austria and Hungary, and passing the eastern borders of France into Switzerland (iNaturalist 2025).

In Italy until now three species of the genus *Dicranopalpus* have been recorded: *D. gasteinensis* Doleschall, 1852 from the Alpine region (Martens 1978, Dioli et al. 2012), and two endemic species: *D. larvatus* (Canestrini, 1874) from Sicily, mountain ranges of southern Italy (Abruzzo and Calabria) and Sardinia (Wijnhoven & Martens 2019); *D. brevipes* Marcellino, 1970 is extremely rare, with old records from Caltanissetta, Sicily (type locality; Marcellino 1970), Tripi (Sicily), the Isle of Favignana (Marcellino 1973, 1975), and recently from Sardinia (Wijnhoven et al. 2020).

Species of the genus *Dicranopalpus* are characterized by their sexually dimorphic pedipalps with a knob-shaped apophysis proximally on the femur and a long to extremely

long apophysis on the patella medially, giving the pedipalp a forked appearance (Martens 1978). In the field, both sexes of *D. ramosus* are immediately recognisable (also from other *Dicranopalpus* species, except *D. caudatus* Dresco, 1948) by their resting posture, with legs held parallel and stretched out sideways. Also, females typically develop a distinct bump on the back of the opisthosoma.

Here we report on the first Italian findings of *D. ramosus* from the southern regions of Calabria and Sicily.

Material and methods

The new Italian specimens (preserved in 75% ethyl alcohol) are stored and were recovered in recently checked unidentified samples of the Museo civico di Scienze Naturali 'E. Caffi', Bergamo. Original drawings were based on sketches directly drawn from an Olympus light microscope, with the aid of a calibrated drawing mirror.

Material investigated. *D. ramosus*, ITALY, Calabria, Fagnano Castello (Cosenza), Lago dei Due Uomini, 39.5524°N 16.0225°E, 1100 m a.s.l., 2 ♂, 1 ♀, 22. Aug. 2011, light trap, leg. M. Valle, det. I. Petri; Sicily, Sant'Alfio (Catania), vicinity of the cave Grotta dei Ladroni, 37.7719°N, 15.0730°E, 1150 m a.s.l., 1 ♀, Jul. 2021–Aug. 2021, pitfall trap, leg. G. Marchese, det. I. Petri.

Comparative material. FRANCE, Bayeux, 49.1682°N 0.4186°E, 43 m a.s.l., 1 ♂, 3 ♀, 23. Sep. 2014, hand searching, leg. & det. H. Wijnhoven (Coll. H. Wijnhoven, CHW446).

Results

In the male (Fig. 1a, b) the patellar apophysis is smaller and more slender than in the female (Fig. 1e). The transverse black patch on the prosoma ('eye mask'), which usually makes males of *D. ramosus* easy to identify, is faded in our sample, due to preservation in ethanol (Fig. 1f). The first segment of the male chelicera (1c, d) has a ventral spur, the first and second segment dorsally are set with denticles. The penis is long and slender, proximally of the glans the truncus has a fusiform cavity, opening to the exterior via a single, simple median slit (Fig. 2a, c, e). In the Italian male the cavity and slit are short compared to the French male (Fig. 2e). The glans is about

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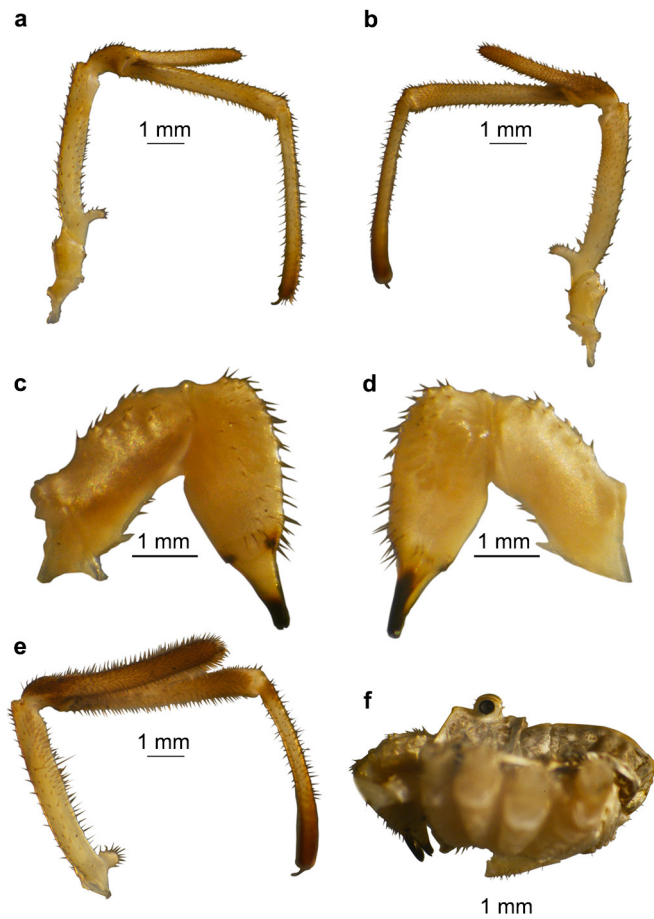


Fig. 1: *Dicranopalpus ramosus* from Fagnano Castello, Calabria. **a-b.** male right pedipalp, retrolateral view (a), prolateral view (b); **c-d.** male right chelicera, retrolateral view (c), prolateral view (d); **e.** Female left pedipalp, prolateral view; **f.** male habitus, lateral view. Scale bars 1 mm

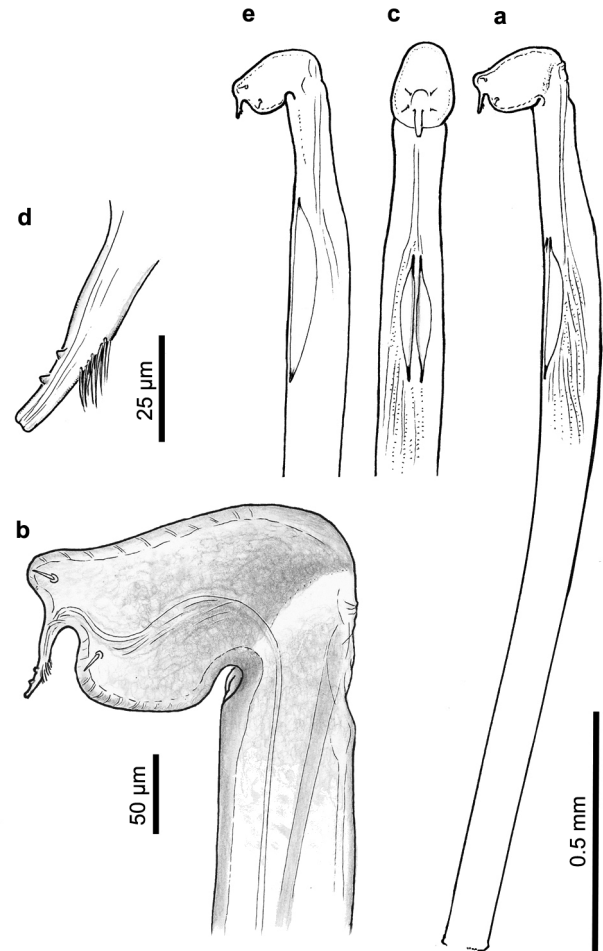


Fig. 2: *Dicranopalpus ramosus*, penis. **a-d.** specimen from Fagnano Castello, Calabria; **e.** specimen from Bayeux (France, CHW446). **a.** lateral view; **b.** glans and stylus, lateral view; **c.** dorsal view; **d.** stylus tip with brush of minute setae and small 'teeth'; **e.** lateral view. Scale bar a, c, e 0.5 mm, b, 50 µm, d. 25 µm

rectangular in lateral view with a bulge above the stylus (Fig. 2b), distally with two pairs of sensory setae. Stylus is slender, curved downwards, close to the stylus top with a ventral cluster of setae (Fig. 2d), dorsally with two or three pairs of minute teeth.

Besides one photographic record from Palermo, Sicily in 2025 (Fig. 3), that needs to be confirmed, we present two new localities, the first near Lago dei Due Uomini, Calabria (Fig. 3, point 1), the second near the cave Grotta dei Ladroni, Sicily (Fig. 3, point 2). The specimens were collected using a light trap in Lago dei Due Uomini and a pitfall trap in the vicinity of the cave Grotta dei Ladroni.

Discussion

The present findings document the first occurrences of *Dicranopalpus ramosus* in Italy, raising the number of Italian harvestmen to 138 species (137 in 2025; Pantini & Isaia 2019, 2025). Considering the limited interest in research on Italian Opiliones, we cannot exclude the possibility that the species is also present in other Italian regions.

Both locations mentioned are situated in virtually unaltered natural environments. Lago dei Due Uomini is a natural area in Calabria, home to a relict population of *Ischthyosaura alpestris* (Laurenti, 1768; Amphibia: Salamandridae), which

attests to the area's role as a refuge during the last glaciation (Dubois & Breuil 1983). Grotta dei Ladroni is a lava cave with the characteristic of maintaining snow throughout the year (Poli 1959). Unfortunately, no study has yet been conducted on the arachnid species composition inside this cave system. So, the presence of *D. ramosus* in the vicinity of the cave may be interpreted as part of a disjunct distribution pattern, and therefore a possibility remains that it may not be an alien species. Apparent subtle morphological differences in penial proportions (Fig. 2) with West-European specimens may support this, as well as the still considerable geographic separation from the expanding distribution area. Thus, given the natural and relatively undisturbed character of both localities, further surveys, complemented by genetic analyses, will be needed to clarify the origin of these populations, revealing whether these are relicts from the last glaciation, or have been accidentally introduced recently.

Most of all, the updated distribution map (Fig. 3) shows the remarkable pace at which *D. ramosus* continues to expand, having colonised all of Great Britain, reaching eastward into Poland, the Czech Republic, Austria and Hungary, and moving northward onto Scandinavian territory. However, the high mountain ranges of the Alps, where the alpine species *D. gasteinensis* dominates, seem to be avoided by *D. ramosus*

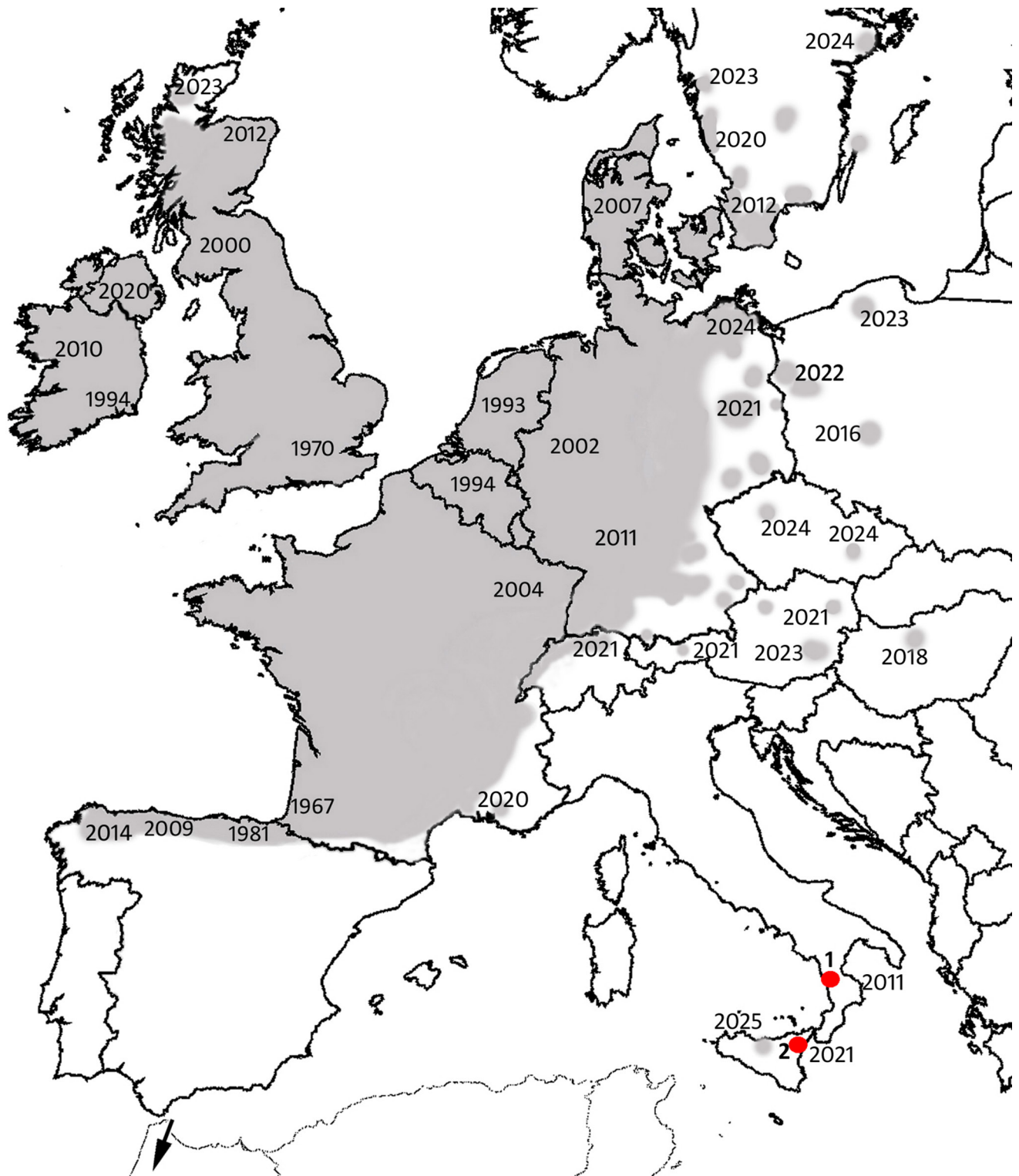


Fig. 3: Distribution map of *Dicranopalpus ramosus* (dark-grey area, with years of first record), including the new Italian localities (red dots, 1: Lago dei Due Uomini, 2: Grotta dei Ladroni (redrawn from Wijnhoven & Prieto 2015 and supplemented with a selection of records from iNaturalist 2025; see references in the text; arrow points to the locus typicus in Morocco).

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