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First Italian reports of *Nemoscolus laurae* (Simon, 1868) and *Zodarion isabellinum* (Simon, 1870) (Arachnida Araneae) in Sicily and remarkable additions to the Sicilian Araneofauna

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ABSTRACT This paper reports some new data obtained in recent years during surveys on arachnids (Arachnida Araneae) present in Sicily (Italy). Particularly, fifteen new species of spiders are reported for the first time in Sicily: *Nemoscolus laurae* (Simon, 1868); *Emblyna brevidens* (Kulczyński, 1897); *Dysdera lata* Reuss, 1834; *Drassodes luteomicans* (Simon, 1878); *Ceratinella scabrosa* (O. Pickard-Cambridge, 1871); *Entelecara erythropus* (Westring, 1851); *Hilaira excisa* (O. Pickard-Cambridge, 1871); *Parapelecopsis nemoralis* (Blackwall, 1841); *Trichoncus helveticus* Denis, 1965; *Alopecosa cuneata* (Clerck, 1757); *Tibellus macellus* Simon, 1875; *Scytodes univittata* Simon, 1882; *Rhomphaea nasica* (Simon, 1873); *Zodarion isabellinum* (Simon, 1870): *Zodarion pusio* Simon, 1914. Six genera are reported for the first time for Sicily while *Nemoscolus laurae* and *Zodarion isabellinum* are new also for Italian fauna. Additional biological and taxonomic notes are also provided.

KEY WORDS New record; *Scytodes univittata; Entelecara erythropus; Dysdera lata*; *Trichoncus helveticus; Hilaira excisa*.

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INTRODUCTION

Arachnological studies in Sicily have increased in recent years (Dentici & Galasso, 2021; Dentici, 2022; Dentici et al., 2022; Lenzini, 2022) leading to an increase in the reported species. Currently, the species known for the island amount to 465 - 223 genera and 43 families (Pantini & Isaia, 2019).

We are currently conducting several research on the population of Arachnids in Sicily, of which we summarize some results in the present work: 15 new species of spiders are reported, 2 are new for Italy, and 6 genera are reported for the first time for

Sicily; for each species, the data relating to the collection, are reported.

MATERIAL AND METHODS

Most specimens were collected on sight on plants, under the rocks or in their spiderwebs, some instead using pitfall traps. The specimens were observed, in laboratory, with stereomicroscope for identification, stored in centrifuge tubes of different sizes and fixed in 75% ethanol (Levi, 1977). The samples are stored in A. Dentici's collection (Palermo, Italy) and for each sample all the collection data in Italian language and the collector are indicated.

The maps were created using the QGis open-source program. We decided to limit the distribution of the *Nemoscolus laurae* and *Zodarion isabellinum* up to Western Paleartic, while for the other species we only showed their presence or absence in the various regions of Italy. Distribution data outside this area was listed in the text. The classification, taxonomic order and nomenclatural arrangement for spiders follow Roberts (1995), Trotta (2004), Pantini & Isaia (2019), World Spider Catalog (2022) and Netwig et al. (2022). Other references have also been used and cited in the text.

RESULTS

Systematics

Familia ARANEIDAE Clerck, 1757
Genus *Nemoscolus* Simon, 1895

Nemoscolus laurae (Simon, 1868)

MATERIAL EXAMINED. Sicily (Italy), Trapani, Marsala, laguna dello Stagnone di Marsala, 37°51'45.8"N, 12°29'04.2"E, 10.VII.2022, 5 ♀♀ and 2 spiderlings, legit V. Genna.

DISTRIBUTION. Western Mediterranean.

REMARKS. The species and the genus are here reported for the first time in Italy. This species was observed for the first time in the Sicilian sampling site as early as August 2020, an occasion in which female specimens with spiderlings were observed (Figs. 1–4). In 2021, also in the month of August, adult females with spiderlings were observed. In 2022, the year of sampling of the above specimens, the same conditions (adult females with offspring) were observed in mid-June. These observations show a malleability of the reproductive period of the species or its link with temperatures, which in 2022 were hotter than in the previous two years for the same month. The observation of the species on these various occasions has allowed us to notice that the number of young born varies between 40 and 50 individuals (out of a sample of 10 observed cocoons). Another interesting observation concerns the probable "matriphagy". Out of 10 "conical shelters", typical of this species, 4 of these were inhabited only by juveniles, the remaining 6 by females and offspring. The theme of matriphagy is clearly speculative in this case, it has not been observed directly, but it is also undoubtedly frequent in other species of spiders such as *Stegodyphus lineatus* (Latreille, 1817) (Salomon et al., 2005), *Cheiracanthium japonicum* Bösenberg et Strand, 1906 (Toyama, 1999; 2003) or *Amaurobius ferox* (Walckenaer, 1830) (Kim & Horel, 2010).

Familia DICTYNIDAE O. Pickard-Cambridge, 1871
Genus *Emblyna* Chamberlin, 1948

Emblyna brevidens (Kulczyński, 1897)

MATERIAL EXAMINED. Sicily (Italy), Trapani, Mazara del Vallo, 37°40'07.8"N 12°35'01.2"E, 02.V.2023, 1 ♂ and 1 ♀, legit A. Ditta.

DISTRIBUTION. Europe (Fig. 5).

REMARKS. This genus and this species are here reported for the first time in Sicily. Both of these specimens were collected under the same small boulder.

Emblyna brevidens has been ascertained in Italy only in Goggau, municipality of Tarvisio (Udine, Friuli Venezia Giulia) (di Caporiacco, 1927).

Familia DYSDERIDAE C. L. Koch, 1837
Genus *Dysdera* Latreille, 1804

Dysdera lata Reuss, 1834

MATERIAL EXAMINED. Sicily (Italy), Monreale, Caculla, 38°03'03.2"N, 13°14'44.2"E, 16.IV.2017, 1 ♂, legit A. Dentici.

Figures 1–3. Female of *Nemoscolus laurae* from Stagnone di Marsala (Fig. 3) with spiderlings in the peculiar conical cocoon.

Figure 4. Map distribution of *Nemoscolus laurae*.

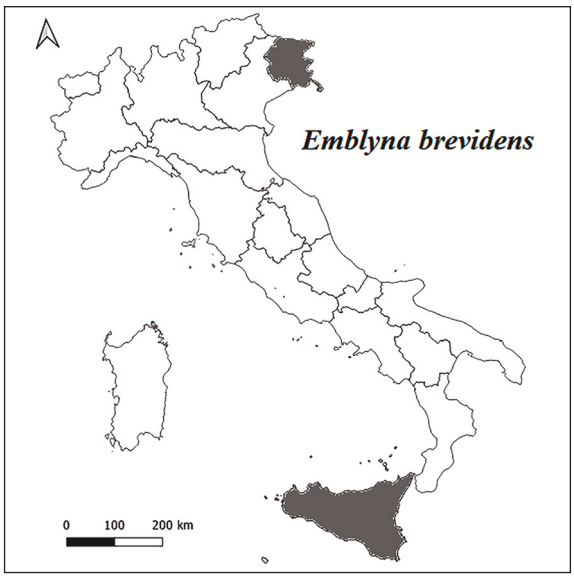

Figure 5. Map distribution of *Emblyna brevidens* in Italy.

DISTRIBUTION. Mediterranean to Georgia (Fig. 6).

REMARKS. *Dysdera lata* is here reported for the first time in Sicily; this specimen was found while wandering during the night.

Dysdera lata has been ascertained in Italy only in the municipality of San Ferdinando (Reggio Calabria, Calabria) (Pantini et al., 2020a).

Familia GNAPHOSIDAE Pocock, 1898
Genus *Drassodes* Westring, 1851

Drassodes luteomicans (Simon, 1878)

MATERIAL EXAMINED. Sicily (Italy), Trapani, Castellammare del Golfo, Balata di Baida, 38°01'32.6"N 12°47'19.0"E, 25.III.2022, 1 ♂, legit S. Surdo.

DISTRIBUTION. Southern Europe (Fig. 7).

REMARKS. This species is here reported for the first time in Sicily; *Drassodes luteomicans* was collected from its silk case, built under a small stone.

Drassodes luteomicans has been reported in Italy from Friuli-Venezia Giulia (di Caporiacco, 1927), Valle d'Aosta (di Caporiacco, 1928), Lombardia (di Caporiacco, 1941), Sardegna (Pantini et al., 2013; Bazzato et al., 2023).

Familia LINYPHIIDAE Blackwall, 1859
Genus *Ceratinella* Emerton, 1882

Ceratinella scabrosa (O. Pickard-Cambridge, 1871)

MATERIAL EXAMINED. Sicily (Italy), Palermo, Alia, C/da Bordone, 37°47'20"N, 13°43'13"E, 15.V.2022, 1 ♀, legit R. Viviano.

DISTRIBUTION. Europe (Fig. 8), Turkey, Caucasus, Russia (Europe to Far East).

REMARKS. This genus and this species are reported here for the first time in Sicily; it was found among the sediments collected under a rock.

Ceratinella scabrosa has been reported in Italy from Abruzzo (Isaia et al., 2009), Emilia-Romagna (Pantini & Isaia, 2008), Lombardia (Pesarini, 1996; Pesarini, 1997); Isaia et al., 2007), Piemonte (Arnò, 2001; Isaia et al., 2015), Trentino-Alto Adige (Steinberger, 2005; Steinberger, 2007; Steinberger & Zingerle, 2009) and Valle d'Aosta (Negro et al., 2009).

Genus *Entelecara* Simon, 1884

Entelecara erythropus (Westring, 1851)

MATERIAL EXAMINED. Sicily (Italy), Palermo, Monreale, Caculla, 38°03'02.7"N, 13°14'44.2"E, 25.II.2017, 1 ♀, legit A. Dentici: Sicily (Italy), Pa-

Figure 6. Map distribution of *Dysdera lata* in Italy.

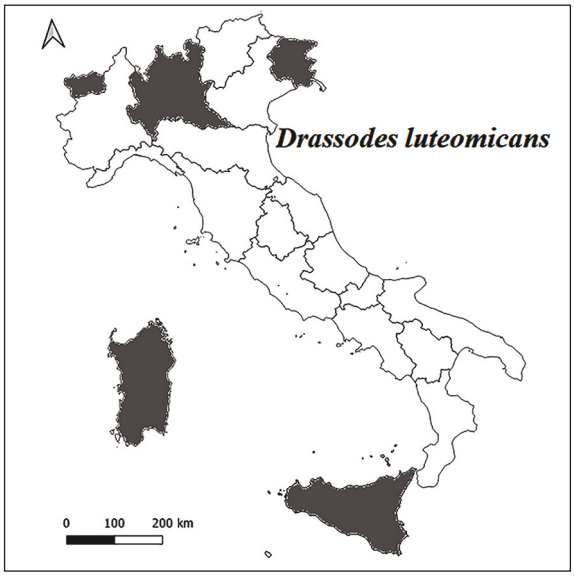

Figure 7. Map distribution of *Drassodes luteomicans* in Italy.

lermo, Monreale, 38°02'45.7"N, 13°14'49.0"E, 13.III.2022, 1 ♂, legit A. Dentici.

Distribution. Europe (Fig. 9), Russia (Europe to Far East), Kazakhstan, Iran, Japan.

Remarks. This genus and this species are reported here for the first time in Sicily; this female specimen was found under a small stone, while the male specimen was found wandering over low vegetation.

Entelecara erythropus has been reported in Italy only from Giardini Biennale in the municipality of Venezia, Veneto (Hansen, 2002).

Genus *Hilaira* Simon, 1884

Hilaira excisa (O. Pickard-Cambridge, 1871)

Material examined. Sicily (Italy), Palermo, 38°08'31.4"N 13°20'15.4"E, 21.II.2022, 1 ♂, legit A. Ditta.

Distribution. Europe (Fig 10).

Remarks. This species and this genus are reported here for the first time in Sicily; *Hilaira excisa* was collected in an urban green area.

It has been reported in Italy from Friuli-Venezia Giulia (Hansen, 2011), Lombardia (Pantini et al., 2016; Pantini et al., 2020b), Piemonte (Isaia et al., 2015), Trentino-Alto Adige (Zingerle, 1997; Steinberger, 2007a; Steinberger, 2008; Ballini & Steinberger, 2009; Steinberger, 2010; Ballini et al., 2014; Pantini et al., 2020), Valle d'Aosta (Paschetta et al., 2016) and Veneto (Hansen & Vanin, 2004; Vanin & Turchetto, 2007).

Genus *Parapelecopsis* Wunderlich, 1992

Parapelecopsis nemoralis (Blackwall, 1841)

Material examined. Sicily (Italy), Palermo, Carini, 38°10'45" N, 13°08'42" E, 01.V.2018, 1 ♀, legit R. Viviano.

Distribution. Europe, Georgia (Fig 11).

Remarks. This species and this genus are here reported for the first time in Sicily; this specimen was found under rotting wood.

Parapelecopsis nemoralis has been reported in Italy from Friuli-Venezia Giulia (di Caporiacco, 1922) and Toscano (di Caporiacco, 1923).

Genus *Trichoncus* Simon, 1884

Trichoncus helveticus Denis, 1965

Material examined. Sicily (Italy), Trapani, Salemi, 23.V.2021, 7 ♀♀, legit A. Ditta; Sicily

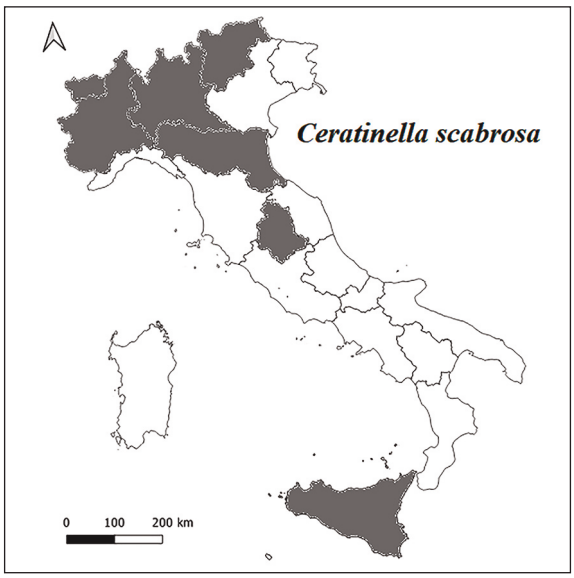

Figure 8. Map distribution of *Ceratinella scabrosa* in Italy.

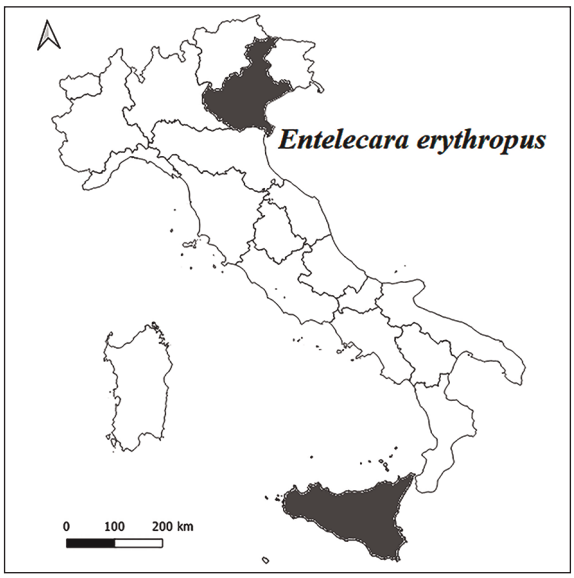

Figure 9. Map distribution of *Entelecara erythropus* in Italy.

(Italy), Caltanissetta, Niscemi, Geloi Wetland, 37°06'01.8"N, 14°20'36.4"E, 15.I.2023, 1 ♂, legit A. Dentici; Sicily (Italy), Trapani, Mazara del Vallo, Borgata Costiera, 20.VI.2023, 2 ♀♀, legit A. Ditta.

DISTRIBUTION. Spain, France, Switzerland, Italy (Fig. 12).

REMARKS. *Trichoncus helveticus* is here reported for the first time in Sicily; these specimens were found under stones.

There are no certain data on the presence of *T. helveticus* in Italy. Recorded from Pesarini (1995), sources not available. Trotta (2005) recalls the record by Pesarini.

Familia LYCOSIDAE Sundevall, 1833
Genus *Alopecosa* Simon, 1885

Alopecosa cuneata (Clerck, 1757)

MATERIAL EXAMINED. Sicily (Italy), Palermo, Monreale, Sagana, 38°02'22.8"N, 13°12'04.8"E, 17.IV.2017, 1 ♀, legit A. Dentici; Sicily (Italy), Palermo, Monreale, Caculla, 38°03'07.9"N, 13°14'45.9"E, 29.IV.2018, 2 ♂♂ and 1 ♀, legit A. Dentici; Sicily (Italy), Trapani, RNI Lago Preola e Gorghi Tondi, 37°34'30.4"N 12°40'47.6"E, 30.IV.2023, 1 ♀, legit A. Ditta.

DISTRIBUTION. Europe (Fig. 13), Turkey, Caucasus, Russia (Europe to Far East), Kazakhstan, China.

REMARKS. *Alopecosa cuneata* is here reported for the first time in Sicily; these specimens were collected wandering on low vegetation during the evening, near the banks of the Sant'Elia river.

Alopecosa cuneata has been reported in Italy from Calabria (Ijland & Helsdingen van, 2019), Emilia-Romagna (Canestrini & Pavesi, 1868), Friuli-Venezia Giulia (di Caporiacco, 1922; Hansen, 1997; Hansen, 2011), Lazio (Lacasella et al., 2014), Lombardia (Sordelli, 1868; Pavesi, 1875; Pavesi, 1879; Pantini et al., 2020b), Molise (Trotta, 2020), Piemonte (Lugetti & Tongiorgi, 1969; Lambiase et al., 2007; Isaia et al., 2007; Paschetta et al., 2013; Caprio et al., 2015; Isaia et al., 2015), Toscana (Lugetti & Tongiorgi, 1969; Cianferoni et al., 2010), Trentino-Alto Adige (Noflatscher, 1988; Noflatscher, 1990; Zingerle, 1997; Zingerle, 1999; Zingerle, 2000a; Zingerle, 2000b; Steinberger, 2007a; Steinberger, 2007b; Steinberger, 2008; Ballini et al., 2011; Ballini et al., 2014; Ballini et al., 2015; Fontana et al., 2020; Pantini et al., 2020b; Petri et al., 2021; Plunger et al., 2022), Valle d'Aosta (Isaia et al., 2008; De Angelis & Fantoni, 2008; Negro et al., 2009; Negro et al., 2013) and Veneto (Ninni, 1869; Denis, 1963; Zingerle, 1998; Zin-

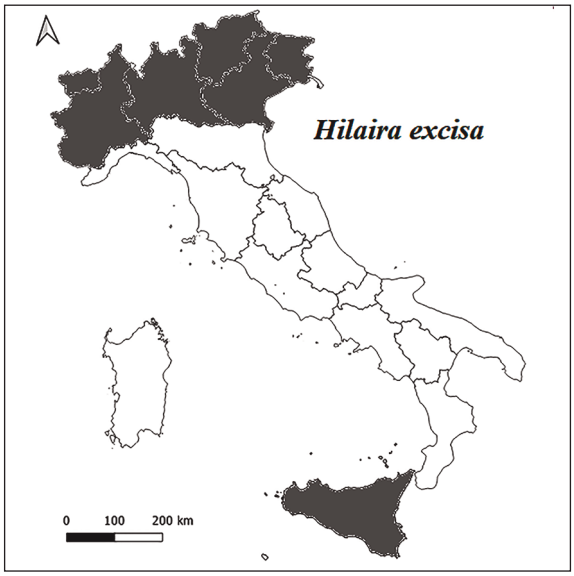

Figure 10. Map distribution of *Hilaira excisa* in Italy.

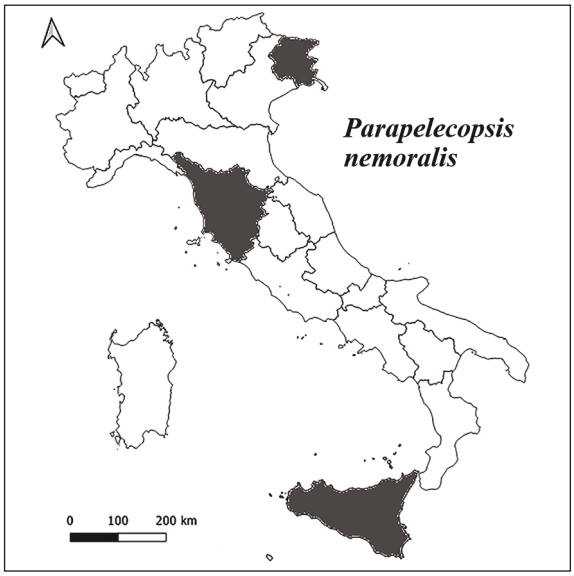

Figure 11. Map distribution of *Parapelecopsis nemoralis* in Italy.

gerle, 2000a; Ballarin et al., 2011; Trotta & Cherubini, 2017; Nardi & Marini, 2021).

Familia PHILODROMIDAE Thorell, 1870
Genus *Tibellus* Simon, 1875

Tibellus macellus Simon, 1875

MATERIAL EXAMINED. Sicily (Italy), Ragusa, Roccazzo, Chiaramonte Gulfi, 24.IV.2021, 1 ♀, legit S. Surdo.

DISTRIBUTION. Europe (Fig. 14), Turkey, Caucasus, Russia (Europe to Far East), Kazakhstan.

REMARKS. *Tibellus macellus* is here reported for the first time in Sicily; this female specimen was found while stationed on low dry vegetation.

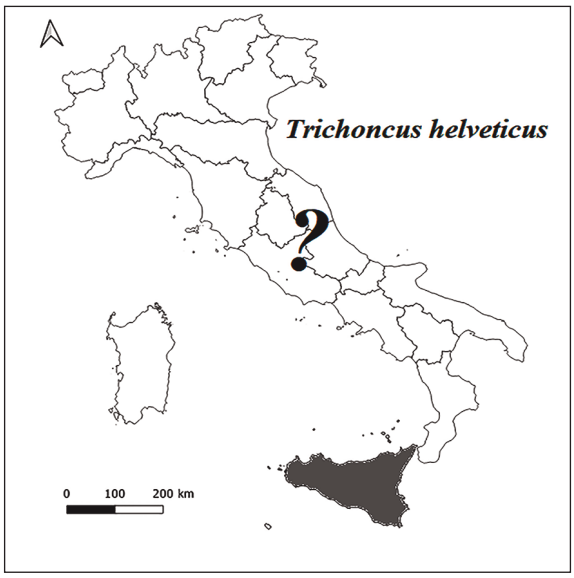

Figure 12. Map distribution of *Trichoncus helveticus* in Italy.

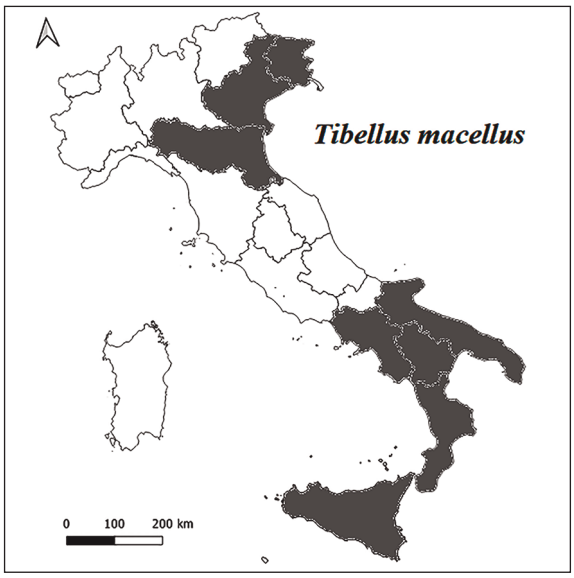

Figure 14. Map distribution of *Tibellus macellus* in Italy.

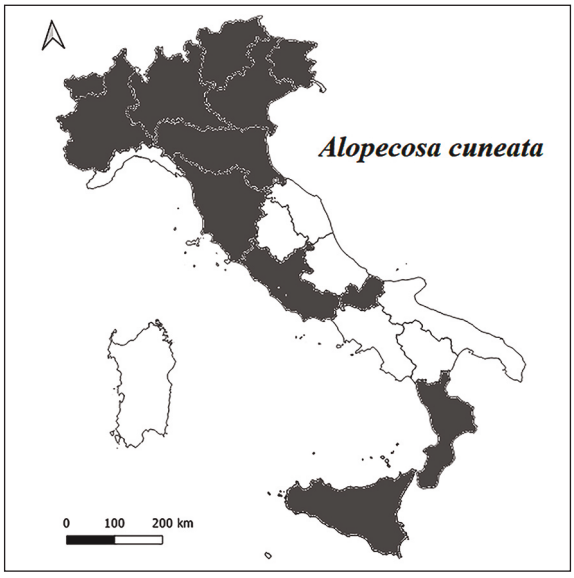

Figure 13. Map distribution of *Alopecosa cuneata* in Italy.

Figure 15. Map distribution of *Scytodes univittata* in Italy.

Tibellus macellus has been reported in Italy from Calabria (Caffi, 1895; Ijland & Helsdingen van, 2016; Ijland & Helsdingen van, 2019), Emilia-Romagna (di Caporiacco, 1926), Friuli-Venezia Giulia (di Caporiacco, 1949; Nardi et al., 2019; Lami et al., 2020), Veneto (di Caporiacco, 1950; Marcuzzi et al., 1971; Hansen & Iaconcig, 1999); Puglia (Ijland et al., 2012; Lucia et al., 2013), Campania (Ijland & Helsdingen van, 2014) and Basilicata (Ijland & Helsdingen van, 2016).

Familia SCYTODIDAE Blackwall, 1864
Genus *Scytodes* Latreille, 1804

Scytodes univittata Simon, 1882

MATERIAL EXAMINED. Sicily (Italy). Palermo, in domestic house, 02.XII.2018, 1 ♀, legit R. Viviano; idem, 24.VIII.2023, 1 ♀; Trapani, in domestic house, 08.V.2023, 1 ♂, legit L. Di Nicola; idem, 15.V.2023, 1 ♂; idem, in domestic house, 15.V.2023, 1 ♂, legit S. Surdo.

DISTRIBUTION. Egypt, Turkmenistan, Kyrgyzstan, India. Introduced to Hawaii, Mexico, Cuba, Venezuela, Brazil, Paraguay, Chile, Canary Islands, Spain (Fig. 15).

REMARKS. *Scytodes univittata* is reported here for the first time in Sicily.

These Sicilian specimens were found inside houses, in the first case specimens of *Scytodes thoracica* (Latreille, 1802) were found in the same house. The species has been reported in Italy from Lazio and Liguria (Trotta, 2017).

Familia THERIDIIDAE Sundevall, 1833
Genus *Rhomphaea* L. Koch, 1872

Rhomphaea nasica (Simon, 1873)

MATERIAL EXAMINED. Sicily (Italy), Palermo, Monreale, Caculla, 38°02'59.7"N, 13°14'36.4"E, 03.II.2018, 1 ♂, legit A. Dentici.

DISTRIBUTION. Canary Islands, Portugal, Spain, France, Italy (Fig. 16), Croatia, Greece, Africa, St. Helena.

REMARKS. This species is here reported for the first time in Sicily; the specimen was found on its intricate net built on the leaves of a lemon tree.

Rhomphaea nasica has been reported in Italy from Toscana (de Dalmas, 1922; Picchi et al., 2016; Picchi, 2020; Picchi et al., 2020); Puglia (di Caporiacco, 1951), Lazio (Brignoli, 1967), Sardegna (Pantini et al., 2013; Bosmans & Colombo, 2015), Basilicata (Ijland & Helsdingen van, 2016), Calabria (Ijland & Helsdingen van, 2016; Pantini & Mazzoleni, 2018; Ijland & Helsdingen van, 2019).

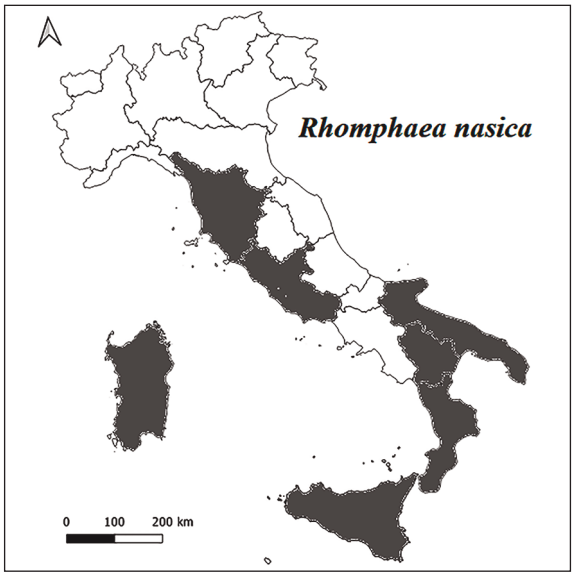

Figure 16. Map distribution of *Rhomphaea nasica* in Italy.

Figure 17. Map distribution of *Zodarion isabellinum*.

Familia ZODARIIDAE Thorell, 1881
Genus *Zodarion* Walckenaer, 1826

Zodarion isabellinum (Simon, 1870) (Fig. 17)

MATERIAL EXAMINED. Sicily (Italy), Trapani, Mazara del Vallo, Capo Granitola, 37°33'37.8"N 12°40'54.2"E, 03.06.VI.2023, 1 ♂, legit A. Ditta.

DISTRIBUTION. Spain, Morocco, Algeria.

REMARKS. This species is here reported for the first time in Sicily and Italy; it was found wandering on the ground, in a plot near the beach.

Identification follows Benhalima & Bosmans (2020).

Zodarion pusio Simon, 1914

MATERIAL EXAMINED. Sicily (Italy), Trapani, Triscina, 03.IV.2022, 1 ♀, legit A. Barbera.

DISTRIBUTION. France, Italy (Fig. 18), Slovenia, Croatia, Bosnia, Herzegovina, Tunisia.

REMARKS. This species is here reported for the first time in Sicily; this specimen was found under a small stone.

Zodarion pusio has been reported in Italy from Toscana (de Dalmas, 1922; Picchi, 2020), Calabria (Kritscher, 1969), Emilia-Romagna (Pesarini, 1991a; Pesarini, 1993; Benassi & Dal Zotto, 2020), Lazio (Bosmans, 1997), Liguria (Bosmans, 1997; Trotta, 2019), Lombardia (Giordano et al., 2002; Isaia et al., 2007), Veneto (Ballarin et al., 2011; Ballarin & Petri, 2021), Sardegna (Bosmans & Colombo, 2015; Bosmans et al., 2019; Bazzato et al., 2022; Bazzato et al., 2023) and Basilicata (Ijland & Helsdingen van, 2016).

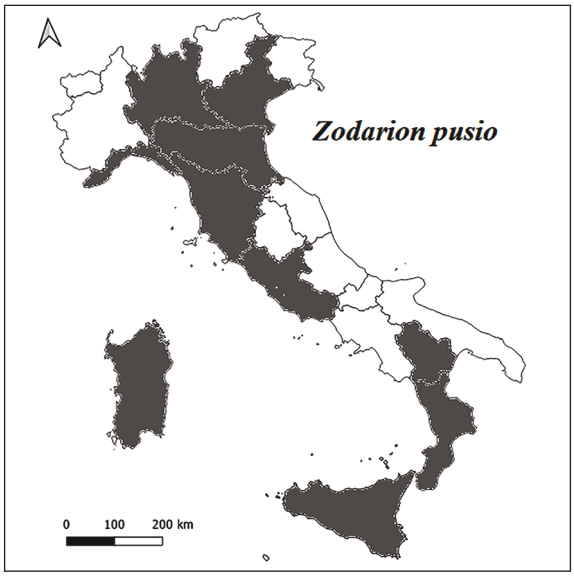

Figure 18. Map distribution of *Zodarion pusio* in Italy.

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