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Spermophora senoculata* on Sicily/Italy (Araneae: Pholcidae)*Enrico Schifani, Antonino Dentici, Letizia Alleruzzo & Piergiorgio Di Pompeo**

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Abstract. The pholcid spider *Spermophora senoculata* (Dugès, 1836) is recorded for the first time on the Mediterranean Island of Sicily (Italy) from indoor heated and non-heated habitats of two cities. This species is associated with mostly anthropogenic habitats around the globe. Uncertainty remains about where its native distribution range is located.

Keywords: exotic species, house spiders, synanthropic

Zusammenfassung. *Spermophora senoculata* auf Sizilien/Italien (Araneae: Pholcidae). Die Zitterspinne *Spermophora senoculata* (Dugès, 1836) wird erstmals für die Mittelmeerinsel Sizilien (Italien) gemeldet, aus geheizten und ungeheizten Räumen aus zwei Städten. Diese Art ist weltweit mit anthropogenen Habitaten assoziiert. Es ist weiterhin unklar wo ihr natürlicher Ursprung liegt.

The genus *Spermophora* Hentz, 1841 (Araneae: Pholcidae) currently includes forty-six species in total (World Spider Catalog 2019), mainly spread across Africa, Asia, Northern Australia and some Pacific Islands (Huber 2005). However, the systematic position of many of these species remains significantly problematic as the genus is highly polyphyletic (Huber et al. 2018).

Today, the existing literature records indicate *S. senoculata* to be widespread across the Mediterranean basin. It is currently considered to be present in the following countries around the Mediterranean Sea: Israel (Zonstein et al. 2015), Turkey (Demir & Seyyar 2017), Greece including Crete (Deltshv 2011, Bosmans et al. 2013), Croatia and Montenegro (Nentwig et al. 2019), Slovenia (Kostanjšek & Kuntner 2015), Italy (peninsular and Sardinia) (Pantini & Isaia 2018), Malta (Pfliegler et al. 2017), Tunisia (Dimassi et al. 2016), France including Corsica (Pétillon et al. 2007, Lissner 2016), and Spain including the Balearic Islands (Cardoso & Morano 2010). Interesting examples of populations found in natural areas in the Mediterranean were reported by Senglet (1971), who wrote about the presence of *S. senoculata* on Crete under stones around the ruins of Knossos and in a cave, and Brignoli (1979a), who recorded its presence inside a Sardinian cave. In April 2019, a juvenile *Spermophora* cf. *senoculata* was found in the Botanical Garden of Bologna (Italy) under a fallen log (P. Di Pompeo leg.).

However, only in the last 20 years an astonishing 38 new species, currently considered to belong to *Spermophora*, were described (Huber 2001, 2003a, 2003b, 2003c, 2005, 2009b, Senglet 2008, Huber & Warui 2012, Huber & Kwapong 2013, Yao & Li 2013, Huber et al. 2014). Many others were attributed to other genera, including new similar genera that have been described. Although none of these species is Mediterranean, and *S. senoculata* still presents some unmistakable characters, this level of change in the taxonomy of the genus suggests that it may be worth confirming previous records of *S. senoculata* by re-examination of voucher specimens.

Material and methods

The specimens are stored in the personal collections Dentici and Di Pompeo. They were photographed using a Canon MP-E 65mm f/2.8 1–5× Macro Photo lens along with a Canon 1300D reflex camera. The program CombineZP was used to fuse images. Determination: Huber (2002), Nentwig et al. (2019). Other taxonomic studies dealing with *Spermophora* and related groups (see Introduction) were also consulted.

Results

Spiders were collected by direct sampling at three localities: (1) ITALY, Sicily, Palermo, Mondello, 38.1953°N, 13.3350°E, 5 m a.s.l., room of a house and a non-heated building, 2. Nov. 2018, 3 ♀♀, 16. Feb. 2019, 1 ♂, E. Schifani leg.; (2) ITALY, Sicily, Santa Lucia del Mela, 38.1412°N, 15.2834°E, 250 m a.s.l., room of a house, 21. Nov. 2018, 1 ♂, 3 ♀♀ L. Alleruzzo leg.; (3) ITALY, Sicily, Palermo, 38.1480°N, 13.3150°E, 70 m a.s.l., non-heated building, 20. Mar. 2019, 4 ♀♀ A. Dentici leg.

Immature and adult females were collected at all three sites, and an adult male was collected in Mondello (Fig. 1). Reproduction was witnessed once, inside a heated room in Mondello, where an adult female was observed surrounded by twenty-one newly hatched spiderlings.

Discussion

The type species of the genus *Spermophora*, *S. senoculata* (Dugès, 1836), is the only one to have attained global distribution due to human-mediated dispersal (Huber 2005). Unfortunately, the identity of its native range is not yet understood. It may be a Mediterranean (Huber et al. 2017) or a Middle-Eastern species (Nentwig et al. 2019), while its closest relatives are probably native to Western Asia (Huber et al. 2018). Currently, *S. senoculata* is well-distributed across Europe (without the northern parts, the northernmost record is from Belgium) and North America and east to Japan (Huber 2000, Nentwig 2015, World Spider Catalog 2019), and was also observed in South America (Laborda & Simó 2008). Widely regarded as a synanthropic species, it is usually found inside buildings across most of its range (e.g. Huber 2000, 2005, Blick et al. 2004).

Many pholcid species have successfully spread across continents outside their native range as a result of human activities. The Asian *Pholcus phalangoides* (Fuesslin, 1775) and the Mediterranean *Holocnemus pluchei* (Scopoli, 1763) are among the most successful of relevance to temperate regions (Huber

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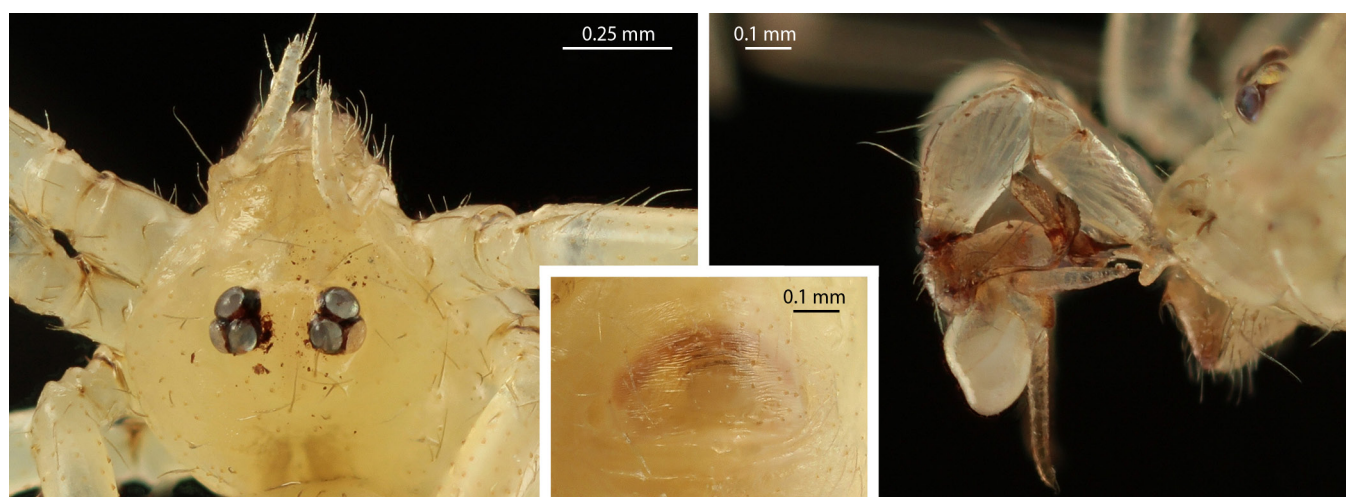


Fig. 1: Details of Sicilian specimens of *Spermophora senoculata* (Dugès, 1836) from Palermo, Mondello, (Italy). Left to right: adult female, dorsal view of the prosoma; adult female, epigyne; adult male, pedipalp in lateral view (photos by E. Schifani)

2009a). At least sixteen pholcid species have been introduced in Europe, making Pholcidae the second most species-rich introduced family in the continent, placed between the much larger families Salticidae Blackwall, 1841 and Theridiidae Sundevall, 1833 (Van Keer & Van Keer 2001, Kobelt & Nentwig 2008, Huber et al. 2015, Nentwig 2015, Huber et al. 2017). Among them, a second species of *Spermophora*, *S. kerinci* Huber, 2005, native to South-eastern Asia (Huber 2005), was recently discovered inside some heated buildings in England and Germany just few years after its description (Snazell & Smithers 2007, Kielhorn 2009). Of these sixteen pholcid species (Nentwig 2015, Huber et al. 2015), apart from *Spermophora* spp., the following six are currently considered established (Nentwig 2015): *Artema atlanta* Walckenaer, 1837, *Crossopriza lyoni* (Blackwall, 1867), *Micropholcus fauroti* (Simon 1887), *Modisimus culicinus* (Simon, 1893), *Pholcus phalangoides*, *Psilochorus simoni* (Berland, 1911) and *Smeringopus pallidus* (Blackwall, 1858). Most of the introduced pholcids appear to prefer anthropogenic habitats and none is recognized as harmful (Huber et al. 2017). In general, the current knowledge about the impacts of exotic spiders on native arthropod communities remains very low (Nentwig 2015).

The discovery of *Spermophora senoculata* on the island of Sicily is not surprising given its already widespread presence in neighbouring regions. Moreover, the Sicilian araneofauna has been neglected for many years, and numerous species were recorded only in recent times (Di Pompeo et al. 2011, Dentici 2017, Dentici & Amata 2018). Our findings occurred exclusively inside cities, and the knowledge of cave spiders in Sicily does not report any trace of its presence from these potentially suitable habitats (Brignoli 1979b). However, it appears premature to exclude the possibility that it represents a native species. The examples from other Mediterranean large islands, such as Crete and Sardinia (Senglet 1971, Brignoli 1979a), suggest that *S. senoculata* could be able to find suitable natural habitats for its establishment. Moreover, further supporting this possibility, a single juvenile *Spermophora* specimen (unfortunately not morphologically identifiable to species rank) was very recently found under a stone in a pine reforestation on the island of Marettimo (Egadi Islands), only few kilometres west of Sicily (37.9605°N, 12.0734°E, 28. Apr. 2019, A. Dentici leg.).

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References

- Blick T, Bosmans R, Buchar J, Gajdoš P, Hänggi A, van Helsdingen P, Růžička V, Staręga W & Thaler K 2004 Checkliste der Spinnen Mitteleuropas. Checklist of the spiders of Central Europe. (Arachnida: Araneae). – Internet: https://arages.de/fileadmin/Pdf/checklist2004_araneae.pdf (14. Dec. 2018)
- Bosmans R, Van Keer J, Russell-Smith A, Kronstedt T, Alderweireldt M, Bosselaers J & De Koninck H 2013 Spiders of Crete (Araneae). A catalogue of all currently known species from the Greek island of Crete. – Nieuwsbrief van de Belgische Arachnologische Vereniging 28, Supplement 1: 1-147
- Brignoli PM 1979a Ragni d'Italia XXXI. Specie cavernicole nuove o interessanti (Araneae). – Quaderni del Museo di Speleologia 'V. Rivera', L'Aquila 10: 3-48
- Brignoli PM 1979b Ragni d'Italia XXXII. Specie Cavernicole di Sicilia (Araneae). – Animalia 5: 273-286
- Cardoso P & Morano E 2010 The Iberian spider checklist (Araneae). – Zootaxa 2495: 1-52 – doi: [10.11646/zootaxa.2495.1.1](https://doi.org/10.11646/zootaxa.2495.1.1)
- Deltshev C 2011 The faunistic diversity of cave-dwelling spiders (Arachnida, Araneae) of Greece. – Arachnologische Mitteilungen 40: 23-32 – doi: [10.5431/aramit4004](https://doi.org/10.5431/aramit4004)
- Demir H & Seyyar O 2017 Annotated checklist of the spiders of Turkey. – Munis Entomology & Zoology 12: 433-469
- Dentici A 2017 Contribution to the knowledge of Sicilian spider fauna (Arachnida Araneae). – Biodiversity Journal 8: 861-864
- Dentici A & Amata FC 2018 New faunistic data for the Sicilian Aracnofauna (Arachnida Araneae). – Biodiversity Journal 9: 271-276 – doi: [10.31396/Biodiv.Jour.2018.9.3.271.276](https://doi.org/10.31396/Biodiv.Jour.2018.9.3.271.276)
- Dimassi N, Ezzine IK, Khadra YB, Zellama MS, Othmen AB & Said K 2016 A new record of spider species from Tunisia (Arachnida: Araneae). – Journal of Research in Biological Sciences 2: 13-29
- Di Pompeo P, Kulczycki A, Legittimo CM & Simeon E 2011. New records for Europe: *Argiope trifasciata* (Forsskal, 1775) from Italy and Malta (Araneae, Araneidae). – Arachnology 15: 205-208 – doi: [10.13156/arac.2011.15.6.205](https://doi.org/10.13156/arac.2011.15.6.205)
- Huber BA 2000 New World pholcid spiders (Araneae: Pholcidae): a revision at generic level. – Bulletin of the American Museum of Natural History 254: 1-347 – doi: [10.1206/0003-0090\(2000\)254<0001:NWPSAP>2.0.CO;2](https://doi.org/10.1206/0003-0090(2000)254<0001:NWPSAP>2.0.CO;2)

- Huber BA 2001 The pholcids of Australia (Araneae; Pholcidae): taxonomy, biogeography, and relationships. – *Bulletin of the American Museum of Natural History* 260: 1-144 – doi: [10.1206/0003-0090\(2001\)260<0001:TPOAAP>2.0.CO;2](https://doi.org/10.1206/0003-0090(2001)260<0001:TPOAAP>2.0.CO;2)
- Huber BA 2002 Functional morphology of the genitalia in the spider *Spermophora senoculata* (Pholcidae, Araneae). – *Zoologischer Anzeiger* 241: 105-116. – doi: [10.1078/0044-5231-00024](https://doi.org/10.1078/0044-5231-00024)
- Huber BA 2003a Cladistic analysis of Malagasy pholcid spiders reveals generic level endemism: Revision of *Zatavua* n. gen. and *Paramicromerys* Millot (Pholcidae, Araneae). – *Zoological Journal of the Linnean Society* 137: 261-318 – doi: [10.1046/j.1096-3642.2003.00046.x](https://doi.org/10.1046/j.1096-3642.2003.00046.x)
- Huber BA 2003b High species diversity in one of the dominant groups of spiders in East African montane forests (Araneae: Pholcidae: *Buitinga* n. gen., *Spermophora* Hentz). – *Zoological Journal of the Linnean Society* 137: 555-619 – doi: [10.1046/j.1096-3642.2003.00053.x](https://doi.org/10.1046/j.1096-3642.2003.00053.x)
- Huber BA 2003c Southern African pholcid spiders: revision and cladistic analysis of *Quamtana* gen. nov. and *Spermophora* Hentz (Araneae: Pholcidae), with notes on male-female covariation. – *Zoological Journal of the Linnean Society* 139: 477-527 – doi: [10.1046/j.0024-4082.2003.00082.x](https://doi.org/10.1046/j.0024-4082.2003.00082.x)
- Huber BA 2005 Revision of the genus *Spermophora* Hentz in Southeast Asia and on the Pacific Islands, with descriptions of three new genera (Araneae: Pholcidae). – *Zoologische Mededelingen* 79: 61-114
- Huber BA 2009a Four new generic and 14 new specific synonymies in Pholcidae, and transfer of *Pholcoides* Roewer to Filistatidae (Araneae). – *Zootaxa* 1970: 64-68 – doi: [10.11646/zootaxa.1970.1.3](https://doi.org/10.11646/zootaxa.1970.1.3)
- Huber BA 2009b Life on leaves: leaf-dwelling pholcids of Guinea, with emphasis on *Crossopriza cylindrogaster* Simon, a spider with inverted resting position, pseudo-eyes, lampshade web, and tetrahedral egg-sac (Araneae: Pholcidae). – *Journal of Natural History* 43: 2491-2523 – doi: [10.1080/00222930903207876](https://doi.org/10.1080/00222930903207876)
- Huber BA, Eberle J & Dimitrov D 2018 The phylogeny of pholcid spiders: a critical evaluation of relationships suggested by molecular data (Araneae, Pholcidae). – *ZooKeys* 789: 51-101 – doi: [10.3897/zookeys.789.22781](https://doi.org/10.3897/zookeys.789.22781)
- Huber BA & Kwapong 2013 West African pholcid spiders: an overview, with descriptions of five new species (Araneae, Pholcidae). – *European Journal of Taxonomy* 59: 1-44 – doi: [10.5852/ejt.2013.59](https://doi.org/10.5852/ejt.2013.59)
- Huber BA, Le Gall P & Mavoungou JF 2014 Pholcid spiders from the Lower Guinean region of Central Africa: an overview, with descriptions of seven new species (Araneae, Pholcidae). – *European Journal of Taxonomy* 81: 1-46 – doi: [10.5852/ejt.2014.81](https://doi.org/10.5852/ejt.2014.81)
- Huber BA, Neumann J, Grabolle A & Hula V 2017 Aliens in Europe: updates on the distributions of *Modisimus culicinus* and *Micropholcus fauroti* (Araneae, Pholcidae). – *Arachnologische Mitteilungen* 53: 12-18 – doi: [10.5431/aramit5303](https://doi.org/10.5431/aramit5303)
- Huber BA, Neumann J, Rehfeldt S, Grabolle A & Reiser N 2015. Back in Europe: *Quamtana* spiders (Araneae: Pholcidae) in Germany. – *Arachnologische Mitteilungen* 50: 51-56 – doi: [10.5431/aramit5007](https://doi.org/10.5431/aramit5007)
- Huber BA & Warui CM 2012 East African pholcid spiders: an overview, with descriptions of eight new species (Araneae, Pholcidae). – *European Journal of Taxonomy* 29: 1-44 – doi: [10.5852/ejt.2012.29](https://doi.org/10.5852/ejt.2012.29)
- Kielhorn KH 2009 First records of *Spermophora kerinci*, *Nesticella mogera* and *Pseudanapis aloha* on the European mainland (Araneae: Pholcidae, Nesticidae, Anapidae). – *Arachnologische Mitteilungen* 37: 31-34 – doi: [10.5431/aramit3706](https://doi.org/10.5431/aramit3706)
- Kobelt M & Nentwig W 2008 Alien spider introductions to Europe supported by global trade. – *Diversity and Distributions* 14: 273-280 – doi: [10.1111/j.1472-4642.2007.00426.x](https://doi.org/10.1111/j.1472-4642.2007.00426.x)
- Kostanjšek R & Kuntner M 2015 Araneae Slovenia: a national spider species checklist. – *ZooKeys* 474: 1-91 – doi: [10.3897/zookeys.474.8474](https://doi.org/10.3897/zookeys.474.8474)
- Laborda A & Simó M 2008 First South American records of *Holcnemus pluchei* (Scopoli, 1763) and *Spermophora senoculata* (Duges, 1836) (Araneae: Pholcidae). – *Ganaya* 72: 261-265 – doi: [10.4067/S0717-65382008000200013](https://doi.org/10.4067/S0717-65382008000200013)
- Lissner JA 2016 A small study of the Corsican spider and pseudoscorpion fauna (Araneae, Pseudoscorpiones). – *Nieuwsbrief SPINED* 36: 5-15
- Nentwig W 2015 Introduction, establishment rate, pathways and impact of spiders alien to Europe. – *Biological Invasions* 17: 2757-2778 – doi: [10.1007/s10530-015-0912-5](https://doi.org/10.1007/s10530-015-0912-5)
- Nentwig W, Hänggi A, Kropf C & Blick T 2019 araneae – Spiders of Europe, version 2.2019. – Internet: <https://araneae.nmbe.ch> (16. Feb. 2019) – doi: [10.24436/1](https://doi.org/10.24436/1)
- Pantini P & Isaia M 2018 Checklist of the Italian spiders (Version June 2018). – Internet: www.museoscienzebergamo.it/web/index.php?option=com_content&view=article&id=367:checklist&catid=96:checklist-ragni-italiani&Itemid=94 (14. Dec. 2018)
- Pétillon J, Courtial C, Canard A & Ysnel F 2007 First assessment of spider rarity in Western France. – *Revista Ibérica de Aracnología* 15: 105-113
- Pfiegler WP, Schönhofer A, Niedbała W, Vella P, Sciberras A & Vella A 2017 New records of mites (Acari) and harvestmen (Opiliones) from Malta with a preliminary checklist of Maltese Arachnida. – *Soil Organisms* 89: 85-110
- Snazell R & Smithers P 2007 *Pseudanapis aloha* Forster (Araneae, Anapidae) from the Eden Project in Cornwall, England. – *Bulletin of the British Arachnological Society* 14: 74-76 – doi: [10.13156/ arac.2007.14.2.74](https://doi.org/10.13156/ arac.2007.14.2.74)
- Senglet A 1971 Note sur les Pholcidae (Arachn.) de Grèce. – *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 44: 345-359 – doi: [10.5169/seals-401666](https://doi.org/10.5169/seals-401666)
- Senglet A 2008 New species of *Pholcus* and *Spermophora* (Pholcidae, Araneae) from Iran and Afghanistan, with notes on mating mechanisms. – *Revue Suisse de Zoologie* 115: 355-376 – doi: [10.5962/bhl.part.80432](https://doi.org/10.5962/bhl.part.80432)
- Van Keer K & Van Keer J 2001 Ingeburgerde exotische rilspringen (Araneae: Pholcidae) in Antwerpse haven en enkele algemene bedenkingen bij spinnenmigratie. – *Nieuwsbrief van de Belgische Arachnologische Vereniging* 16: 81-86
- World Spider Catalog 2019 World spider catalog. Version 20.0. Natural History Museum, Bern. – Internet: <https://wsc.nmbe.ch> (16. Feb. 2019) – doi: [10.24436/2](https://doi.org/10.24436/2)
- Yao ZY & Li SQ 2013 New and little known pholcid spiders (Araneae: Pholcidae) from Laos. – *Zootaxa* 3709: 1-51 – doi: [10.11646/zootaxa.3709.1.1](https://doi.org/10.11646/zootaxa.3709.1.1)
- Zonstein SL, Marusik YM & Omelko M 2015 A survey of spider taxa new to Israel (Arachnida: Araneae). – *Zoology in the Middle East* 61: 372-385 – doi: [10.1080/09397140.2015.1095525](https://doi.org/10.1080/09397140.2015.1095525)