



New data on the occurrence of *Steatoda triangulosa* (Walckenaer, 1802) (Araneae: Theridiidae) in Poland

Robert ROZWĄŁKA¹ and Hubert SZYMAŃSKI²

¹Department of Zoology and Animal Ecology, University of Life Sciences in Lublin, Akademicka 13 St., 20-950 Lublin,
e-mail: arachnologia@wp.pl; <https://orcid.org/0000-0002-5631-395X>

²Budowlanych 1A/6 St., 87-800 Włocławek, e-mail: hszymanski99@gmail.com

Abstract: *Steatoda triangulosa* (Walckenaer, 1802) is a spider species known from most areas of the Palaearctic, and has also been introduced to North America. In the southern part of its range, this spider species lives in natural habitats, while in regions with a colder climate, e.g. Western and Central Europe, it is usually found in synanthropic conditions. The first records of *S. triangulosa* were made in Poland at the beginning of the 21st century and probably represent single, accidentally introduced specimens. This paper presents information on recent observations and new localities that now indicate that *S. triangulosa* is a well-established synanthropic species in Poland.

Key words: cobweb spiders, expansive species, false widow species, synanthropic species

INTRODUCTION

The theridiid spider *Steatoda triangulosa* (Walckenaer, 1802) (Fig. 1) is known from North Africa, Europe, the Middle East (Nentwig et al. 2023), the Caucasus region (Otto 2022), China (Song et al. 1999), Korea (Namkung 2002) and Japan (Yoshida 2001). It has also been introduced to the Canary Islands and to the USA and Canada (Levi 1957, World Spider Catalog 2023). In Southern Europe and in the Middle East it is a widespread species, occurring in various open and warm habitats, e.g. under stones in sunny grasslands, on dunes, saltmarshes, but also in forests and scrubland, vineyards, or in the initial parts of caves (Nentwig et al. 2023, Le Peru 2011, Wiehle 1937). In Western and Central Europe, *S. triangulosa* occurs almost exclusively in synanthropic conditions – inside or in close proximity to buildings (Nentwig et al. 2023, Roberts 1995, Wiehle 1937).

In the last decades, a northward spread of *S. triangulosa* has been observed in Europe (Nentwig et al. 2023). This expansion process is well illustrated by the record data in the German spider recording scheme (Arachnologische Gesellschaft 2023). *Steatoda triangulosa* has also been recorded relatively recently in Poland (Rozwółka 2011, Rozwółka et al. 2013), but so far the data suggested that it is an occasionally imported species, which is not yet established (Rozwółka & Stachowicz 2021). Now, recent observations presented in this paper demonstrate that this theridiid spider should be considered an established part of the Polish fauna.

COLLECTED MATERIAL AND RECORDED OBSERVATIONS

Specimens of *Steatoda triangulosa* were collected from the following locations and habitats:

Lublin: Chemiczna Str. 2, large building and horticultural store [UTM grid square: FB 17]: among flowerpots on flower stand, etc. locations: 3 Jun 2017 – 1 juv.; 2 Oct 2021 – 1 ♀ with an egg sac on a plant imported from the Netherlands: 2 Apr 2022 – 1 juv. (leg. R. Rozwółka), 15 Jul 2023 – 1 ♀ under pallet;

Łańcut: Orchid House [EA 84]: 29 Jul 2022 – 1 ♀, 1 juv. and several more individuals observed (leg. & obs. R. Rozwółka);

Włocławek: Smocza St. 16/18, small production factory, under shelvings and other elements on production halls [CD 63]: 6–7 Apr 2022 – 2♀♀, 3 juv. and several more specimens and egg sacs observed on subsequent days (leg. & obs and doc. phot. by H. Szymański);

Wrocław: Sienkiewicza St. 5, Herbarium building of Wrocław University, under the furniture, in the corners etc. locations, [XS 46]: 29–30 Mar 2022 – 3♀♀, 3 juv. and several more individuals and egg sacs observed (leg. & obs. R. Rozwałka).



Fig. 1. Female of *Steatoda triangulosa* with egg sac in the Włocławek. Photo by H. Szymański.

Moreover, on the iNaturalist website, eighteen more records from Poland have been documented with photos:

Biadacz [YS 02]: 16 Apr 2022: <https://www.inaturalist.org/observations/111649425>

Ciężkowice [DA 91]: 6 Feb 2020 <https://www.inaturalist.org/observations/38420267>

Gogolin [BA 89]: 27 Aug 2023: <https://www.inaturalist.org/observations/180824187>

Gogolin [BA 89]: 7 Sep 2021: <https://www.inaturalist.org/observations/93984446>

Kraków [DA 24]: 24 Sep 2022: <https://www.inaturalist.org/observations/136326902>

Kraków [DA 24]: 25 Aug 2022: <https://www.inaturalist.org/observations/132308143>

Kraków [DA 24]: 30 Sep 2022: <https://www.inaturalist.org/observations/137069318>

Krapkowice [YR 09]: 11 Apr 2022: <https://www.inaturalist.org/observations/111643703>

Nowa Ruda [XS 00]: 5 Nov 2022: <https://www.inaturalist.org/observations/141135414>

Opole-Medyk [YS 11]: 24 Aug 2023: <https://www.inaturalist.org/observations/180823413>

Opole-Śródmieście [YS 01]: 3 Sep 2022: <https://www.inaturalist.org/observations/133463245>

Opole-Wróblin [YS 02] 1 Nov 2022: <https://www.inaturalist.org/observations/140799069>

Strzelce Opolskie [CA 09] 2 Sep 2023: <https://www.inaturalist.org/observations/181421801>

Warszawa-Targówek [EC 09]: 5 Sep 2023: <https://www.inaturalist.org/observations/181883676>

Wrocław-Grabiszyn [XS 36]: 30 Aug 2021: <https://www.inaturalist.org/observations/93197770>

Wrocław-Radwanice [XS 45]: 27 Aug 2023: <https://www.inaturalist.org/observations/180508044>

Wrocław-Stabłowice [XS 36]: 15 Sep 2023: <https://www.inaturalist.org/observations/183291528>

Zielona Góra [WT 35]: 13 Oct 2022: <https://www.inaturalist.org/observations/138593864>

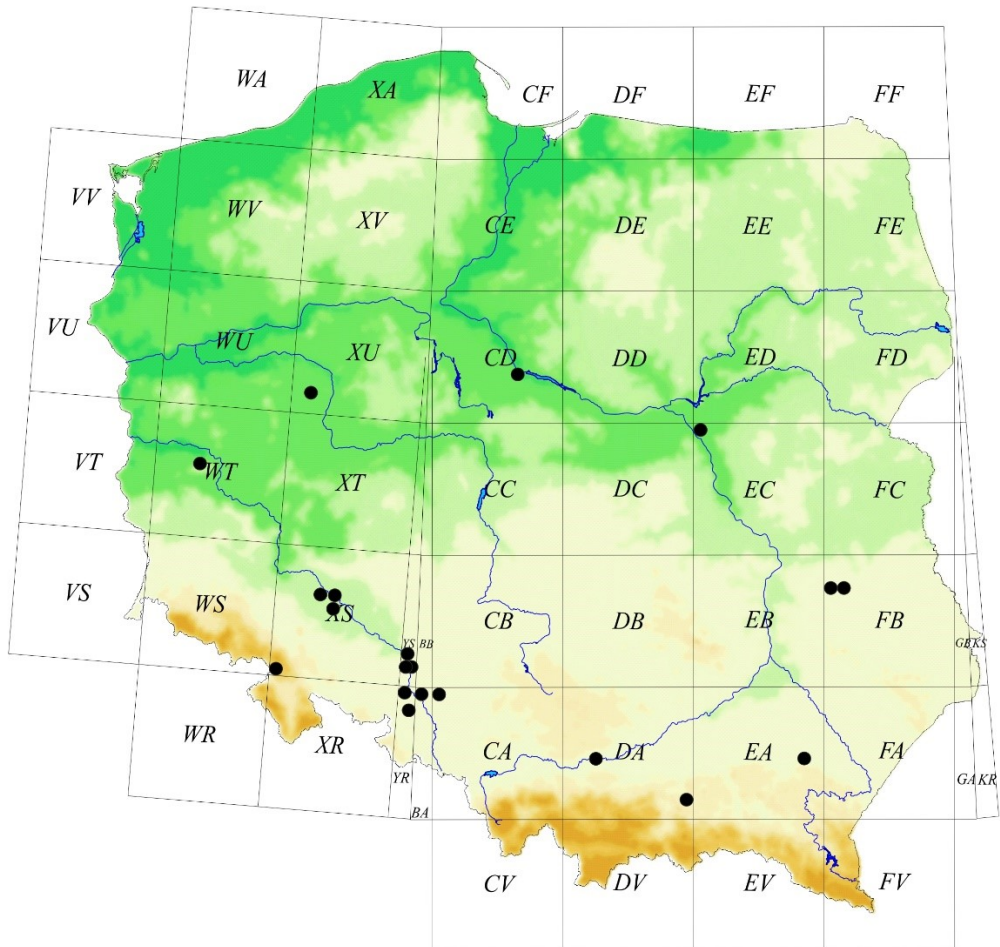


Fig. 2. Distribution of *Steatoda triangulosa* in Poland.

DISCUSSION

So far, records of *Steatoda triangulosa* in Poland have been reported only from Lublin and Sady near Poznań, based on specimens caught in large garden centers, DIY stores or similar buildings (Rozwałka 2011, Rozwałka et al. 2013). However, in all the above-mentioned cases, the few specimens collected and the circumstances of their capture suggest that these were specimens occasionally imported by accident with, e.g., potted plants or packaging material (Rozwałka 2011, Rozwałka et al. 2013). Observations from Lublin in 2017–2023 (presented data) confirm that the import of potted plants still acts as a vector for this species, however, the presence of established populations of this spider could not be confirmed in this area (obs. R. Rozwałka). The data from iNaturalist (2023) do not provide information on population size or the circumstances of observation, but only confirm the recording of *S. triangulosa* specimens. In this context it is worth emphasizing that the observations on *S. triangulosa* in Łańcut, Włocławek and Wrocław (presented data), where several specimens and egg sacs were recorded each, suggest that both locations are colonized by larger populations of this species. This confirms that *S. triangulosa* is already an established species and a permanent element of the synanthropic

araneofauna in Poland. It is probably much more widespread than the currently known localities suggest (Fig. 2). For example, In Germany, several records from and around the city area of Berlin (Arachnologische Gesellschaft 2023) suggest that the species is well established there, hence further populations close to the German border in Poland can be expected, e.g. in the western part of the country our findings demonstrate that the distribution of synanthropic spider species in Poland is still poorly known and further, urgently needed investigations will probably reveal several new localities of *S. triangulosa* and other species.

REFERENCES

- ARACHNOLOGISCHE GESELLSCHAFT 2023. Atlas of the European Arachnids. Available at <https://atlas.arages.de> (14 Sep 2023).
- INATURALIST 2023. Available at https://www.inaturalist.org/observations?taxon_id=81579 (14 Sep 2023).
- LE PERU B. 2011. The spiders of Europe, a synthesis of data: Volume 1 Atypidae to Theridiidae. Mémoires de la Société Linnéenne de Lyon 2: 1–522.
- LEVI H. W. 1957. The spider genera Crustulina and Steatoda in North America, Central America, and the West Indies (Araneae, Theridiidae). Bulletin of the Museum of Comparative Zoology 117: 367–424.
- NAMKUNG J. 2002. The spiders of Korea. Kyo-Hak Publishing Co., Seoul, 648 pp.
- NENTWIG W., BLICK T., BOSMANS R., GLOOR D., HÄNGGI A. & KROPF C. 2023. Spiders of Europe. Version 09.2023. Available at <https://www.araneae.nmbe.ch> (1 Mar 2023). <https://doi.org/10.24436/1>
- OTTO S. 2022. Caucasian Spiders. A faunistic database on the spiders of the Caucasus. Version 02.2022. Available at <https://caucasus-spiders.info/>
- ROBERTS M. J. 1995. Collins Field Guide: Spiders of Britain & Northern Europe. HarperCollins, London, 383 pp.
- ROZWĄŁKA R. 2011. *Steatoda triangulosa* (Walckenaer, 1802) (Araneae: Theridiidae) in Poland. Acta Biologica 18: 143–147.
- ROZWĄŁKA R., RUTKOWSKI T. & BIELAK-BIELECKI P. 2013. New data on introduced and rare synanthropic spiders (Arachnida: Araneae) in Poland. Annales UMCS, sec. C, LXVIII(1): 127–150.
- ROZWĄŁKA R. & STACHOWICZ J. 2021. Pająki (Araneae) województwa lubelskiego. Wydawnictwo UKSW. Warszawa, 271 pp.; eISBN 978-83-8090-986-1
- SONG D. X., ZHU M. S. & CHEN J. 1999. The spiders of China. Hebei Science and Technology Publishing House, Shijiazhuang, 640 pp.
- WIEHLE H. 1937. Spinnentiere oder Arachnoidea. 26. Familie. Theridiidae oder Haubennetzspinnen (Kugelspinnen). Die Tierwelt Deutschlands 33: 119–222.
- WORLD SPIDER CATALOG 2023. World Spider Catalog, version 24.5. Natural History Museum Bern. Available at <http://wsc.nmbe.ch> (14 Sep 2023). <https://doi.org/10.24436/2>
- YOSHIDA H. 2001. The spider genera *Robertus*, *Enoplognatha*, *Steatoda* and *Crustulina* (Araneae: Theridiidae) from Japan. Acta Arachnologica 50: 31–48.

STRESZCZENIE

[Nowe dane na temat występowania *Steatoda triangulosa* (Walckenaer, 1802) (Araneae: Theridiidae) Polsce]

Steatoda triangulosa (Walckenaer, 1802) (Araneae: Theridiidae) jest ekspansywnym gatunkiem pająka wymienianym z większości obszarów Palearktyki, introdukowanym również do Ameryki Północnej. W południowej części swojego areалу występuje w środowisku naturalnym, zakładając niewielkie, nieregularne sieci w przestrzeniach pod kamieniami czy u nasady roślin w ciepłych, suchych i otwartych środowiskach. W Europie Zachodniej i Środkowej występuje w warunkach synantropijnych – wewnątrz budynków lub w ich bliskim sąsiedztwie. Na początku XXI wieku odnotowano przypadki zawleczeń pojedynczych osobników *Steatoda triangulosa* do Polski, ale brak było danych potwierdzających obecność stałych populacji tego gatunku. W pracy przedstawiono informacje o nowych stanowiskach, które wskazują, że *S. triangulosa* jest gatunkiem trwale zadomowionym na terenie kraju.