

New Data on the Spider Fauna (Arachnida: Araneae) of Bulgaria

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Abstract: New data on the distribution of spiders of the families Atypidae, Dictynidae, Mimetidae, Miturgidae, Mysmenidae, Oecobiidae, Pholcidae, Pisauridae, Synsphyridae and Zodariidae are presented. The family Mysmenidae is newly recorded for Bulgaria, while Synsphyridae is newly reported family for the Balkan Peninsula and for Bulgaria. The genus *Oecobius* is also new for the Bulgarian spider fauna. Illustrations contributing to the taxonomic characterisation of some species are provided. A total of ten species are newly recorded from different localities in the country. With the present report, the number of spider species recorded in Bulgaria is increasing up to 1047.

Key words: new families, new genus, distribution, Balkan Peninsula

Introduction

The critical check-list of Bulgarian spiders (DELTSHEV & BLAGOEV 2001) comprised 910 species (of 42 families) and summarised 173 publications. Recently, due to the publication of 93 new papers, the number of the spiders found on the territory of Bulgaria increased to 1037 (of 43 families, see BLAGOEV et al. 2002-2017). The present publication reports new faunistic data on the distribution of spiders of the following ten families: Atypidae, Dictynidae, Mimetidae, Miturgidae, Mysmenidae, Oecobiidae, Pholcidae, Pisauridae, Synsphyridae and Zodariidae. Two families, Mysmenidae and Synsphyridae, are newly recorded for Bulgaria; the latter is also new for the Balkan Peninsula. *Oecobius* Lucas, 1846 is a new genus for the fauna of spiders in Bulgaria. The aim of this paper is to report ten species found in Bulgaria for the first time.

Materials and Methods

The present faunistic list is based on the incorporation of some available unpublished records due to the collecting efforts of the authors and their col-

leagues. The spider material was collected by hand, with pitfall traps and with vacuum cleaner from different regions of the country (Fig. 1). Specimens were examined and measured using Leica M205 C and Wild M5A stereomicroscopes. Photos were taken by Lumix digital camera attached to a Wild M5A stereomicroscope. The specimens are preserved in 70-80% ethanol and deposited in the Institute of Biodiversity and Ecosystem Research (IBER-BAS) and National Museum of Natural History (NMNH-BAS), Sofia. The taxonomic names follow the nomenclature given in the World Spider Catalog (2017). The approximate geographical coordinates are given in decimal degrees.

Results

The examined material contained ten species (of ten families), which are new for the Bulgarian fauna.

Atypidae

Atypus muralis Bertkau, 1890 – 1 ♂, North Black Sea coast: Sts. Konstantin & Elena Resort,

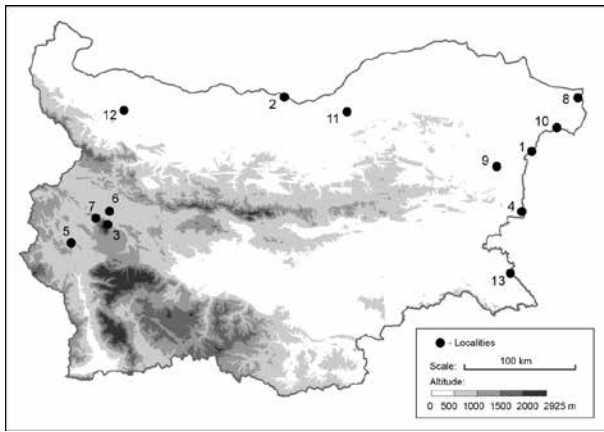


Fig. 1. Localities of the new faunistic records. For details, see the text of the results section

N43.2349°, E28.0025°, 50 m a.s.l., 10.07.2012 (leg. M. Spasov; Fig. 1: 1). The species was described from Central Europe (Germany) but its recent distribution covers Central Europe to Turkmenistan (WCS 2017). Morphologically, our material corresponds to the description of the species and the presented photos contribute to the taxonomic characteristics of the species and can be used for taxonomic comparison between different populations (Figs. 2–6).

Dictynidae

Emblyna brevidens (Kulczyński, 1897) – 1 ♂, Danubian Plain: Belene Island, N43.6661°, E25.2326°, 20 m a.s.l., 20.05.2014 (leg. M. Naumova; Fig. 1: 2). This rare Palaearctic species is known from North, Central and South Europe. Our finding represents the first record of this species from Bulgaria. There are good taxonomic pictures of *E. brevidens* (see HAJDAMOWICZ *et al.* 2007, OGER 2014), characterising quite well the population in Central Europe. The new photos present the south-eastern European population of the species (Figs. 7–11).

Mimetidae

Ero cambridgei Kulczyński, 1911 – 1 ♂, Vitosha Mts.: Bistrishko Branishte Reserve, N42.5858°, E23.3148°, 1451 m a.s.l., 05.08.2007 (leg. C. Deltshev; Fig. 1: 3). Although this species is widespread in the Palaearctic, this is its first record from Bulgaria.

Miturgidae

Zora parallela Simon, 1878 – 1 ♂, Black Sea coast: Cape Emine, near Irakli Site, N42.7483°, E27.8844°, 26 m a.s.l., 01-30.06. 2011, pitfall traps (leg. T. Teofilova, N. Kodzhabashev; Fig. 1: 4). The species is known from North, Central and South Europe. Its present finding is a new record for the country.



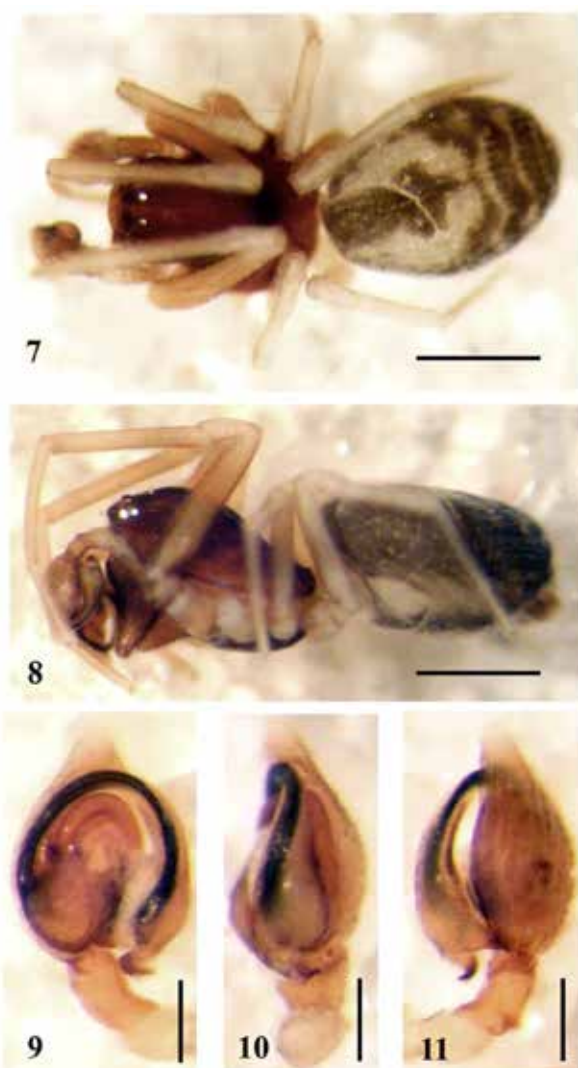
Figs. 2–6. *Atypus muralis* Bertkau, 1890, male. 2. Habitus, dorsal view. 3. Sternum. 4. Spinnerets. 5, 6. Right palp, prolateral view. 6. The same, retrolateral view. Scale bars: 2, 3 – 2.0 mm; 4 – 1.0 mm; 5, 6 – 0.5 mm.

Mysmenidae

Microdipoena jobi (Kraus, 1967) – 1 ♂, Kraishte Area: Klenovik Vill., N42.4226°, E22.9266°, 656 m a.s.l., 04.07.2016, (leg. I. Dedov, N. Simov, R. Bekchiev, vacuum cleaning; Fig. 1: 5). This Palaearctic species is rare; it is recorded from Bulgaria for the first time. The presented photos are a contribution to the taxonomic characteristics of the population of the species on the Balkan Peninsula (Figs. 12–14).

Oecobiidae

Oecobius maculatus Simon, 1870 – 1 ♂, 1 ♀, Sofia City: dwelling houses, N42.6958°, E23.3121°, 556 m a.s.l., 15-25.06.2016 (leg. S. Indzhov); 1 ♀, Sofia City: in the building of NMNH, N42.6960°, E23.3286°, 575 m a.s.l., 20.09.2016 (leg. M. Naumova); 2 juveniles, on the same building, 10.01.2017 (leg. S. Indzhov; Fig. 1: 6). The species is known from the Mediterranean Region and shows some spreading tendencies within Europe since a



Figs. 7–11. *Emblyna brevidens* (Kulczyński, 1897), male. 7, 8. Habitus, dorsal and lateral view. 9–11. Left palp, ventral, prolateral and retrolateral view. Scale bars: 7, 8 – 0.6 mm; 9–11 – 0.15 mm.

few decades (NENTWIG *et al.* 2017). Therefore, its finding in Bulgaria has been expected (Figs. 15–19).

Pholcidae

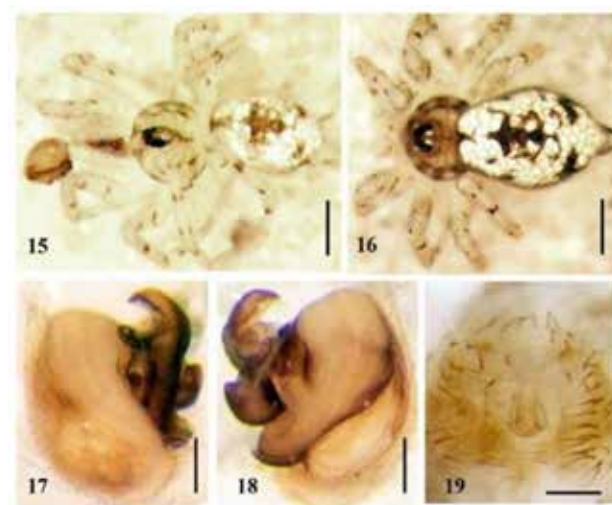
Psilochorus simoni (Berland, 1911) – 1 ♂, Sofia City: in the building of NMNH, N42.6960°, E 23.3286°, 575 m a.s.l., 11.02.2005 (leg. M. Langourov; Fig. 1: 6). Although it is a widespread species in Europe, it has not been reported from Bulgaria to date.

Pisauridae

Pisaura novicia (L. Koch, 1878) – 2 ♂♂, Lyulin Mts.: near Gara Vladaya station, N42.6314°, E23.1821°, 890 m a.s.l., 01-31.03. 2002 (leg. M. Naumova; NAUMOVA *et al.* 2008, as *P. mirabilis*, misidentified; Fig. 1: 7); 1 ♀, North Black Sea coast: near



Figs. 12–14. *Microdipoena jobi* (Kraus, 1967), male. 12. Palps, ventral. 13, 14. Left palp, retrolateral and prolateral view. Scale bars: 0.2 mm

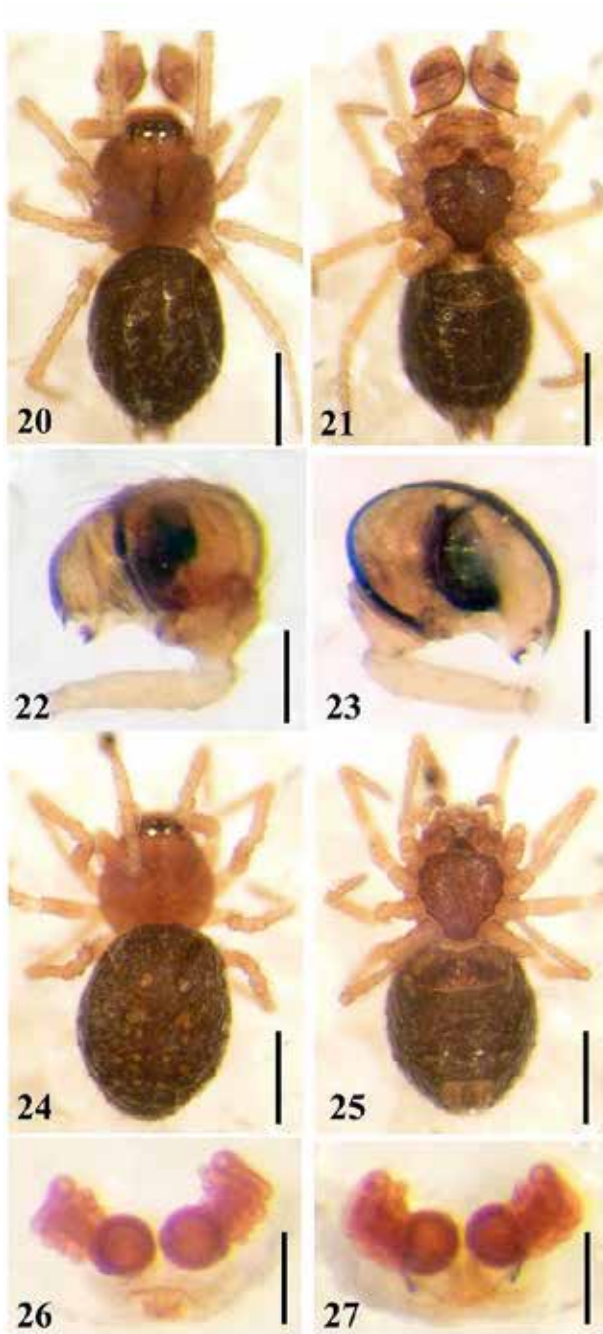


Figs. 15–19. *Oecobius maculatus* Simon, 1870. 15, 16. Male and female habitus, dorsal view. 17, 18. Left male palp, prolateral and retrolateral view. 19. Epigyne. Scale bars: 15, 16 – 0.5 mm; 17–19 – 0.2 mm.

Vaklino Vill., N43.6658°, E28.5263°, 3 m a.s.l., 02-06.06.2014 (leg. M. Naumova; Fig. 1: 8); 1 ♀, Avren Plateau: near Sindel Vill., N43.1142°, E27.6122°, 33 m a.s.l., 19.04.2016 (leg. M. Naumova; Fig. 1: 9); 2 ♀♀, North Black Sea coast: near Bozhurets Vill., N43.4267°, E28.2859°, 39 m a.s.l., 20.04.2016 (leg. M. Naumova; Fig. 1: 10); 1 ♂, 1 ♀, Central Danubian Plain, Shirokovo Vill., N43.5556°, E25.9358°, 144 m a.s.l., 18.05.2016, (leg. M. Naumova; Fig. 1: 11); 1 ♂, Sofia City: near dwelling house, N42.6963°, E23.3123°, 554 m a.s.l., 17.02.2017 (leg. S. Indzhov; Fig. 1: 6). The species is known from the Mediterranean region and is reported from Bulgaria for the first time.

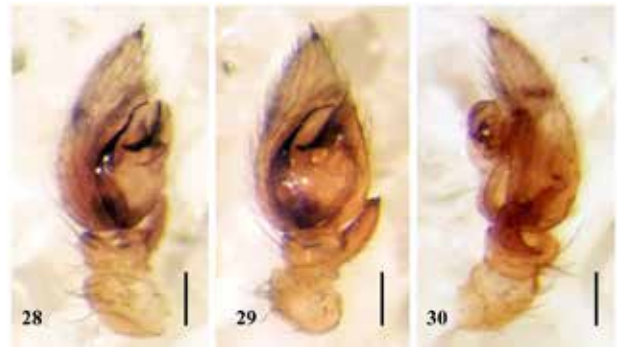
Synsphyridae

Synsphyris lehtineni Marusik, Gnelitsa & Kovblyuk,



Figs. 20–27. *Synaphris lehtineni* Marusik, Gnelitsa & Kovblyuk, 2005. 20, 21. Male habitus, dorsal and ventral view. 22, 23. Left palp, retrolateral and prolateral view. 24, 25. Female habitus, dorsal and ventral view. 26, 27. Vulva, ventral and dorsal view. Scale bars: 20, 21, 24, 25 – 0.3 mm; 22, 23, 26, 27 – 0.15 mm.

2005 – 1 ♂, North of Beli Breg Vill., N43.5163°, E23.4433°, 124 m a.s.l., 08.09.2016 (leg. T. Ljubomirov; Fig. 1: 12); 5 ♂♂, 4 ♀♀, Sofia, Kremikovtsi ward, N42.7882°, E23.4812°, 645 m a.s.l., 27.03.2017 (leg. M. Naumova; Fig. 1: 6). Synaphridae is a small family with three genera and 13 species, distributed in Mediterranean



Figs. 28–30. *Zodarion hauseri* Brignoli, 1984, male. 28 – 30. Left palp, prolateral, ventral and retrolateral view. Scale bars: 0.15 mm.

region (Spain, Croatia, Israel, Egypt), Ukraine, Turkmenistan, the Canary Islands and Madagascar (WSC 2017). *Synaphris* is the most speciose genus in the family with its 11 species (MARUSIK & ZONSTEIN 2011), three of them occurring in Europe. *Synaphris lehtineni* is described from Ukraine (Crimea) and to date has been known only from there and from Romania (NAE 2015). Morphologically, our material corresponds well to the description of the species, which is seen from the presented photos (Figs. 20–27). These are the first records from Bulgaria representing the southernmost localities of the species range.

Zodariidae

Zodarion hauseri Brignoli, 1984 – 4 ♂♂, South Black Sea coast: Primorsko Vill., N42.2470°, E27.7533°, 6 m a.s.l., 27.04–07.06.2016, pitfall traps (T. Teofilova, T. Ljubomirov, N. Karaivanov; Fig. 1: 13); 3 ♂♂, South Black Sea coast: Lozenets vill., N 42.2109°, E 27.8032°, 5 m a.s.l., 01-23.08.2008, pitfall traps (S. Lazarov; Fig. 1: 13). The species is a Balkan endemic, known from Greece and FYRO Macedonia. The present finding is the first record of this species from Bulgaria representing the easternmost locality of its range. There are not any taxonomic photos of the species, so the presented photos contribute to its taxonomic characterisation (Figs. 28–30).

Discussion

Despite the fact that the Bulgarian spider fauna was actively studied, especially during the last few decades, it is still common to find new species for the country. All species mentioned in the present study are known from one or more neighbouring countries, thus their presence in Bulgaria is expected. The newly established family Synaphridae was recently found in the nearby Gorj County in Romania (NAE

2015) while the family Mysmenidae is known from the surrounding territories of Greece and Romania. The representatives of both families are extremely rare and are characterised by very small size (about 1 mm) and low mobility, which may explain their late finding. After this study, the number of the Bulgarian spider species is increased up to 1047 belonging to 45 families.

References

- BLAGOEV G., DELTSHEV C., LAZAROV S. & NAUMOVA M. 2002—2017. The Spiders (Araneae) of Bulgaria. Version: April 2017. National Museum of Natural History, Bulgarian Academy of Sciences, online at <http://www.nmnh.com/spiders-bulgaria/>
- DELTSHEV C. & BLAGOEV G. 2001. A critical checklist of Bulgarian spiders (Araneae). *Bulletin of the British Arachnological Society* 12: 110-138.
- HAJDAMOWICZ I., STAŃSKA M., ZALEWSKI M. & CIURZYCKI W. 2007. *Emblyna brevidens* (Araneae: Dictynidae) in the Mazurian Lake District (NE Poland) – rediscovered in Poland. *Arachnologische Mitteilungen* 33: 21-24.
- MARUSIK Y. M. & ZONSTEIN S. 2011. A synopsis of east-Mediterranean *Synaphris* Simon, 1894 (Araneae, Synsphyridae) with a description of a new species from Israel. *ZooKeys* 82: 35-44.
- NAE A. 2015. *Synaphris lehtineni* Marusik, Gnelista & Kovliuk, 2005 (Synsphyridae, Araneae) – new record for the Romanian fauna. *Travaux de l'Institut de Spéologie "Émile Racovitza"* 54: 27-31.
- NAUMOVA M., BLAGOEV G., LAZAROV S. & DELTSHEV C. 2008. Spiders (Araneae) from Lyulin Mountain (West Bulgaria). *Acta Zoologica Bulgarica* 60 (3): 267-276.
- NENTWIG W., BLICK T., GLOOR D., HÄNGGI A. & KROPF C. 2017. Spiders of Europe. www.araneae.unibe.ch. Version: 7 April 2017.
- OGER P. 2014. First record of *Emblyna brevidens* (Kulczyński, 1897) (Araneae: Dictynidae) for Belgium. *Nieuwsbrief van de Belgische Arachnologische Vereniging* 29 (3): 60-64.
- World Spider Catalog 2017. World Spider Catalog. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, version 18.0, accessed on 7 April 2017.

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