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# NEW DATA ON THE RARE SPIDER SPECIES (ARACHNIDA, ARANEAE) FROM KYIV REGION (UKRAINE)

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**New Data on the Rare Spider Species (Arachnida, Araneae) from Kyiv Region (Ukraine). Yanul, V., Terekhova, V., Polchaninova, N.** — Seven rare spider species collected in the Kyiv Region are listed. *Eresus moravicus* **Řezáč, 2008**, *Parasyrisca arrabonica* Szinetár & Eichardt, 2009, and *Enoplognatha bryjai* Řezáč, 2016 are recorded for the first time from the East European Plain. *P. arrabonica* and *E. bryjai* are recorded for the first time from Ukraine; *Atypus muralis* Bertkau, 1890, *A. piceus* (Sulzer, 1776), and *Mustelicosa dimidiata* (Thorell, 1875) are recorded for the first time from the Kyiv Region. Comments on the geographical distribution and illustrations of four species are provided.
Key words: spiders, new records, Kyiv Region, Ukraine, East European Plain.

## Introduction

To date, 1086 spider species are known in the fauna of Ukraine (Nentwig et al., 2022). Nevertheless, species distribution within the administrative regions and natural zones is far from being fully understood. According to our estimates, 351 spider species belonging to 32 families have been recorded from Kyiv Region. At the same time, the araneofaunas of well-studied regions are much richer: 573 species are known from the Crimea, 537 species from Zakarpattia, 523 species from Donetsk Region, 460 species from Lviv Region, and 435 species from Kharkiv Region. This indicates that the fauna of Kyiv Region needs further study to fill the gaps in spider diversity. This paper aims to summarize new data on the rare spider species collected in Kyiv Region, to comment on their geographical distribution, and to illustrate the most outstanding records.

**Material and methods**

Spiders were collected in the city of Kyiv and the Kyiv Region in 2019–2021 as listed below and are deposited in the personal collections of N. Polchaninova (Kharkiv) and V. Yanul (Kyiv)

List of collecting localities mentioned in the text:

- Ecological Station 'Hlyboki Balyky' 49.96222 N, 31.11889 E.
- Onatsky 9.93769 N, 31.04919 E.
- Rzhyshchiv Technical School for Construction 49.96611 N, 31.10409 E.
- Kozyn 50.223958 N, 30.642077 E.
- Kyiv, National Nature Park 'Holosiivskyi' 50.375927 N, 30.493395 E.
- Vepryk village 50.10606 N, 29.79957 E.

We provide photos/drawings of the three species recorded for the first time from the East European Plain, and of another species, which needs an additional illustration of female genitalia. The photos were taken by V. Terekhova with the use of the camera Leica DC 300 and the binocular microscope Leica MZ 7.5, the pencil drawings were made by V. Yanul.

## A list of species

## Family Atypidae

### *Atypus muralis* Bertkau, 1890

Material examined. Kyiv: Hlyboki Balyky, on the path, hand collecting, 24.06.2021, 1 ♂ (N. Polchaninova leg.).

Distribution. From Central Europe (Nentwig et al., 2022) east to Turkmenistan: Kopetdag (Zonstein, Fet, 1985), and south to Turkey: Muş Province (Özkütük et al., 2015). Ukraine: from Lviv Region and Zakarpattia (Polozhentsev & Akimtseva, 1980; Hirna & Lyesnik, 2014) to Luhansk and Donetsk Regions (Polchninova & Prokoprnko, 2019), and Crimea (Kastrygina, Kovblyuk, 2015); Kyiv Region (**first record**).

### *Atypus piceus* (Sulzer, 1776)

Material examined. Kyiv: National Nature Park 'Holosiivskyi', hornbeam-oak forest, pitfall traps, 23.06–4.07.2020, 1 ♂, V. Yanul leg; Kyiv Reg., Onatsky, meadow steppe on the chernozem soil on a top of slope, abandoned pasture, pitfall traps, 28.05–7.07.2021, 2 ♂ (N. Polchaninova leg.).

Distribution. A European species known to occur from France to Central European Russia (Nentwig et al., 2022), and also recorded from Iran (Schwendinger, 1990). Ukraine: Lviv and Zakarpattia (Legotay, 1989; Hirna & Lyesnik, 2014) to the north of Luhansk and Donetsk Regions, Kyiv (present data) and Kharkiv (Polchaninova & Prokopenko, 2019), to Cherkasy (Singaevsky, 2010) Regions. Kyiv Region (**first record**).

## Family Eresidae

### *Eresus kollari* Rossi, 1846

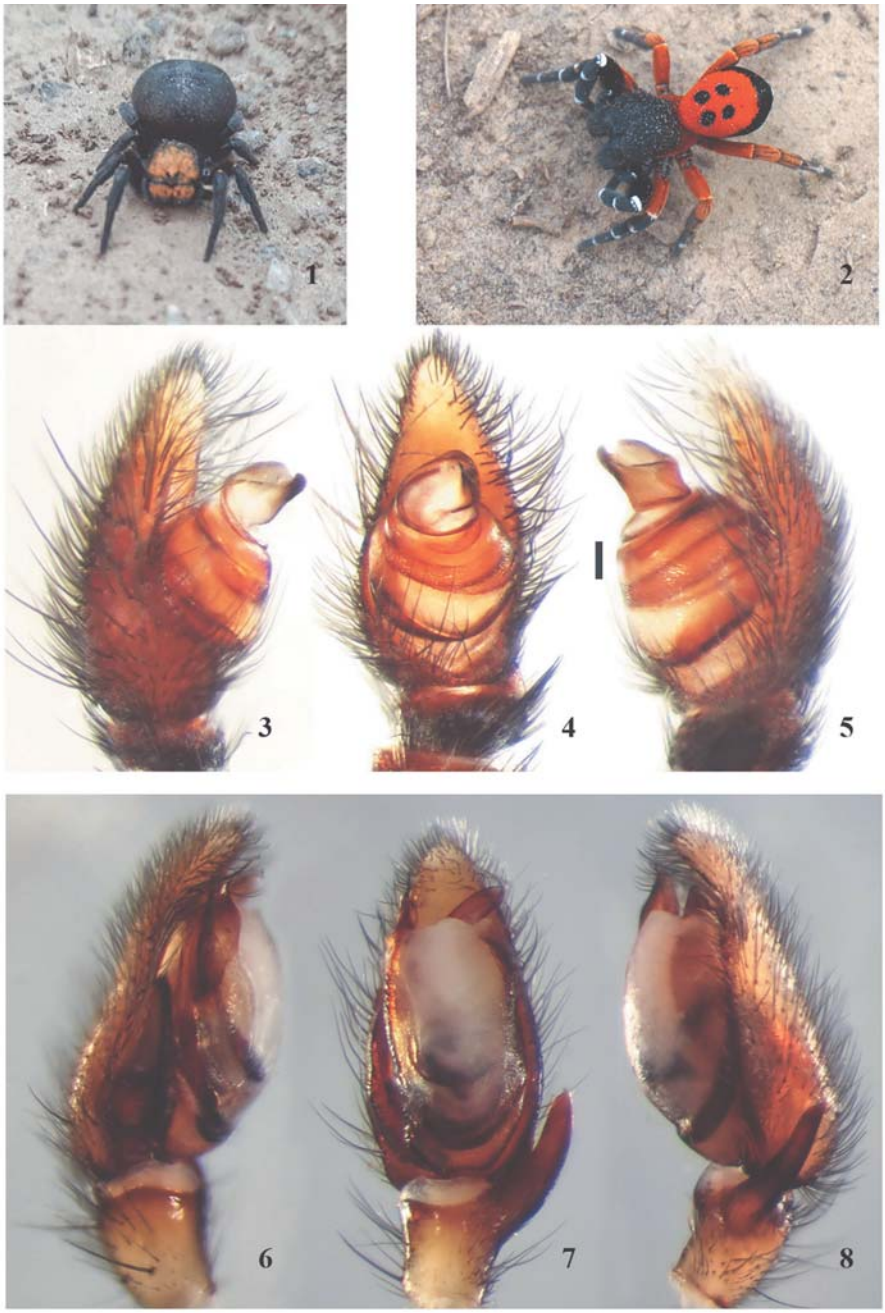
Material examined. Kyiv, vicinity of Kozyn, open dry pine forest on sandy soil, pitfall traps, 17.09–6.10.2019, 1 ♂ (V. Yanul leg.).

Distribution. Western Palearctic nemoral-subtropical species, known from Iberian Peninsula to South Siberia (Novosibirsk Region, Russia) (Řezáč et al., 2008); its distribution in Central Asia and East Palearctic is questionable (Nentwig et al., 2022).

### *Eresus moravicus* **Řezáč, 2008** (figs 1–5)

Material examined. Kyiv: Onatsky, meadow steppe on the chernozem soil on the top of slope, abandoned pasture, pitfall traps, 28.05–7.07.2021, 7 ♂ (N. Polchaninova leg.); 'Hlyboki Balyky', on a dirt road, 23.07.2021, 1 ♀ (only a photo is available; photographer: A. Mishta).

Distribution. The species is known from Central and Southern Europe (Nentwig et al., 2022). It was also registered in the Ukrainian Carpathians (Zhukovets, Kron (2015): Chornohora Mt., 1971, M. Legotay leg., Ye. Zhukovets det.). Kyiv Region (**first record**). First record from the East European Plain.




Figs 1–8. *Eresus moravicus*: 1 — general appearance, female (photo by A. Mishta), 2 — same, male (photo by V. Terekhova); 3–5 — male palp; *Parasyrisca arrabonica*: 6–8 — male palp. 3, 6 — palp, prolateral, 4, 7 — same, ventral, 5, 8 — same, retrolateral. Scale bar 0.1 mm.

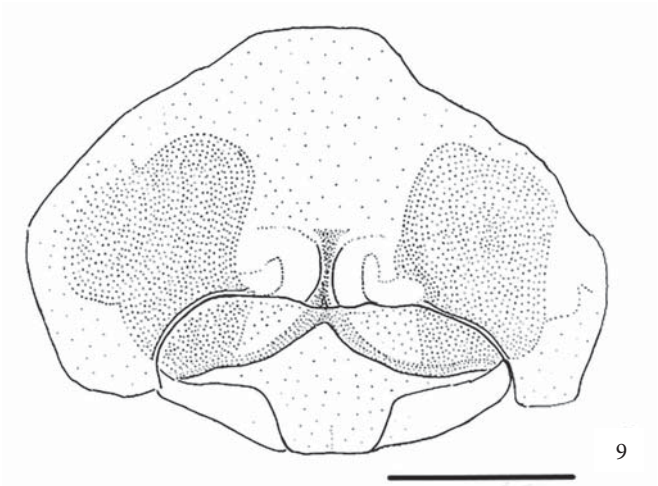
**Family Gnaphosidae**

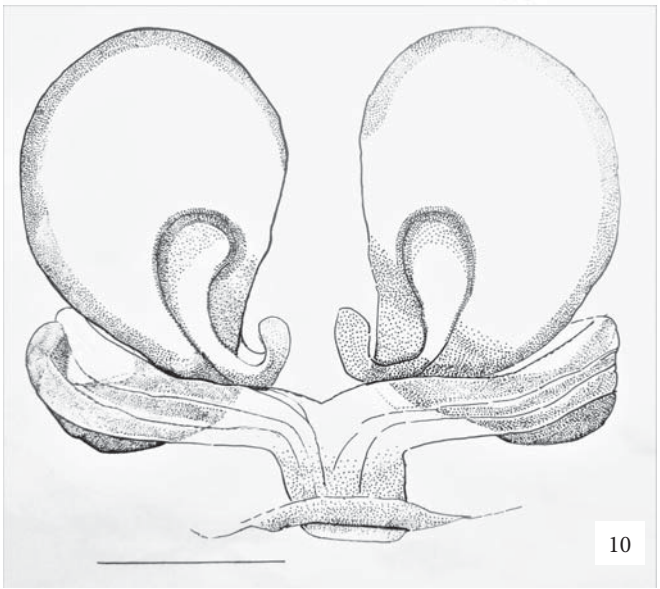
***Parasyrisca arrabonica*** Szinetár & Eichardt, 2009 (figs 6–8)

Material examined. Kyiv: Rzhyshchiv Technical School for Construction, old abandoned field, meadow steppe on sandy soil on a slope, pitfall traps, 8.09–14.10.2021, 1 ♂ (N. Polchaninova & O. Vasylyuk leg.).

Distribution. Hungary (Szinetár et al., 2009), Russia: Orenburg Region (Esyunin, Tuneva, 2020), Ukraine: Kyiv Region (**first record** for Ukraine and the East European Plain).

Note. A very rare species known from the three localities only. It was described from the sandy grasslands of Hungary, found in the saline lands of Ashchasaiskaya Steppe in the Orenburg Nature Reserve in Russia, and on a sandy slope in Kyiv Region (Ukraine).




Figs 9–10. *Mustelicosa dimidiata*: 9 — epigyne, ventral; *Enoplognatha bryjai*: 10 — epigyne, dorsal. Scale bars: fig. 9 0.2 mm; fig. 10 0.1 mm.

**Family Lycosidae**

***Mustelicosa dimidiata*** (Thorell, 1875) (fig. 9)

Material examined. Kyiv: Kozyn, open dry pine forest on sandy soil, pitfall traps, 21.06–9.07.2019, 1 ♂, V. Yanul leg; Rzhyshchiv Technical Schoolfor Building, old abandoned field, meadow steppe on sandy soil on a slope, pitfall traps, 8.09–14.10.2021, 1 ♀ (N. Polchaninova & O. Vasylyuk leg.).

Distribution. East European–Central Asian subboreal species; its westernmost known localities were in Rivne and Mykolaiv Regions of Ukraine (Polchaninova et al., 2017; Hirna et al., 2020).

In the western part of its range, the species has patchy distribution being associated mainly with grasslands and open pine forests on sandy soils. Its eastern boundary is unclear. According to Yu. Marusik (2018), the species recorded from China, Kazakhstan and Korea as *A. albostriata* (Grube, 1861) are likely to refer to other species, related to *Mustelicosa dimidiata*. Nevertheless, there are no recent studies to support this assumption (WSC, 2022).

**Family Theridiidae**

***Enoplognatha bryjai*** Řezáč, 2016 (fig. 10)

Material examined. Kyiv: Vepryk, riparian vegetation (on *Carex* sp.), hand collecting, between 20.07 and 10.08.2019, 1 ♀ (V. Yanul leg.).

Distribution. Czech Republic (Řezáč et al., 2016), Bulgaria (Indzhov, 2021). Ukraine: Kyiv Region (**first record** for Ukraine and the East European Plain).

Note. Rare species known from riparian biotopes where it inhabits *Phragmites australis, Carex* spp., and *Typha* spp. (Řezáč et al., 2016). It was described from Pannonian swamps in southern Moravia and then was found in Bulgaria.

## Discussion

Accounting for the new records, 357 spider species are currently known from the Kyiv Region. Three species, *Eresus moravicus*, *Enoplognatha bryjai,* and *Parasyrisca arrabonica,* are new to the East European Plain; the latter two are new to Ukraine. *E. moravicus* is absent from the list of Ukrainian spiders in the latest version of the Spiders of Europe (Nentwig et al., 2022), while it is mentioned in the country list in the Catalogue of spiders of the former USSR (Mikhailov, 2021). Therefore, the current list of spiders of Ukraine includes 1089 species.

Three *Atypus* species have been recorded from Ukraine. *A. affinis* Eichwald, 1830 is known only from Kremenets (Ternopil Region). Despite the further numerous studies in the western regions of the country, it has not been found since 1830 (Hirna & Lyesnik, 2014). *A. piceus* was registered in seven regions, and *A. muralis* in twelve regions. The former occurs mainly within the Forest, Wood-and-Steppe, and the north of the Steppe zone of Ukraine, while the latter prevails in the Wood-and-Steppe and Steppe, being rare in the Forest zone.

In Europe, *A. piceus* inhabits dry meadows and slopes with sparce vegetation (Nentwig et al., 2022). Further to the east, it gradually changes its habitat preference to mesic and shadowed biotops. In Ukraine, the species was found in meadow steppe and pinewood on lime- and sandstones in Lviv Region (Hirna & Lyesnik, 2014), on a river beach in the Ternopil Region (Fedoriak et al., 2018), in steppe-meadow and broadleaved forests in Cherkasy Region (Syngayevsky, 2010), in meadow steppe and hornbeam-oak forest in

Kyiv Region (present data), and only in floodplain and mesic oak forests in Donetsk and Kharkiv Regions (Polchaninova, Prokopenko, 2013). *A. muralis,* on the contrary, chooses drier habitats and occurs in steppe and steppe-like biotops, on the forest edges and in open forests.

The genus *Eresus* is also represented in Ukraine by three species: *E. kollari, E. moravicus*, and *E. rotundiceps*. An obscure *E. rotundiceps* Simon, 1873 was described based on two males; its identity was based on the body structure and coloration, while the palp was considered by Simon (1873: 345) to be "similar to that of *E. cinnaberinus*" (now *E. kollari* Rossi, 1846). Simon's type material is deposited in the Muséum national d'Histoire naturelle de Paris, France; the syntype is catalogued as "Specimen MNHN-AR-AR14360. Collection: Simon, Eugéne; Sex: male; Country label: Ukraine; Collector's name: Waga A" (MNHNP, 2022). Thereby, the collection date or exact locality is unknown. *E. rotundiceps* was also recorded from Turkmenistan (Kharitonov, 1932).

V. Tyshchenko (1971) synonymized it with *E. kollari* (as *E. niger* (Petagna, 1787), currently a *nomen dubium*, presumably, on the basis of Asian specimens, and other researchers from Central Asia followed this synonymy (Andreeva, 1976; Nenilin & Pestova, 1985). Nevertheless, P. Lehtinen (1967) left the name valid. Currently, *E. rotundiceps* is considered a valid nominal species in the WOS (2022); with its range indicated as "Ukraine, Turkmenistan"! However, it was listed as a synonym of *E. kollari* in the "Catalogue of spiders of the former USSR" (Mikhailov, 2021). Revision of available material will help to resolve this issue.

N. Lukyanov (1897) published the finding of *Eresus kollari* and specified the locality as "Kiev, 1848". The border between the Forest and Wood-and-Steppe zones of Ukraine runs a little south of Kyiv. Considering that Kyiv was much smaller in the middle of the 19th century, we can assume that the collecting locality lies in the Forest zone. Therefore, our finding near Kozyn is the first record from the Wood-and-Steppe part of the Kyiv Region and the first one with exact coordinates.

*Eresus kollari* has also been recorded from the Middle Dnipro area within the neighboring Cherkasy Region (Pichka, 1974; Nikitchenko, Repenko, 2001). Now these records are questionable due to the description of *E. moravicus* (Řezáč et al., 2008). In the collections from the East European Plain, this species had long been neglected and erroneously identified as *E. kollari* (partly in: Polchaninova, Prokopenko, 2019; Polchaninova, 2021). We examined 45 males and one female from the Cherkasy Region (vicinity of the Kaniv Nature Reserve, collection of E. Singaevsky) and found that all these specimens belonged to *E. moravicus.* Adult males of *E. kollari* occur from July (in Ukraine from mid-August) to early October, while those of *E. moravicus* in May–June (Řezáč et al., 2008). V. Pichka indicated collecting dates in the Kaniv Nature Reserve as April–October; T. Nikitchenko and L. Repenko did not specify dates or localities. Interestingly, we have never met spring and autumnal males in the same locality, although spiders were trapped by pitfalls from April to October. To clarify distribution patterns of *E. kollari* vs. *E. moravicus*, all the material collected in spring and early summer in Ukraine needs to be reassessed.

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