

# A contribution to the Slovenian spider fauna – I.

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**Abstract.** Sixteen spider species, new to the Slovenian fauna, have been recorded: *Aphantaulax trifasciata*, *Araneus triguttatus*, *Arctosa cinerea*, *Cnephalocotes obscurus*, *Helophora insignis*, *Heriaeus hirtus*, *Nomisia exornata*, *Nurscia albomaculata*, *Pardosa agricola*, *Pardosa prativaga*, *Pardosa proxima*, *Philodromus longipalpis*, *Runcinia grammica*, *Theridula gonygaster*, *Xysticus ninnii* and *Zora armillata*. Recent records on presumably extinct endemic species *Nesticus idriacus* are also provided, as well as suggestion to its transfer to the IUCN category rare (R).

Key words: new records, spiders, Slovenia, faunistics

**Izveček. PRISPEVEK K FAVNI PAJKOV SLOVENIJE – I.** – Prispevek obravnava 16 vrst pajkov, ki doslej v Sloveniji še niso bile najdene, in sicer: *Aphantaulax trifasciata*, *Araneus triguttatus*, *Arctosa cinerea*, *Cnephalocotes obscurus*, *Helophora insignis*, *Heriaeus hirtus*, *Nomisia exornata*, *Nurscia albomaculata*, *Pardosa agricola*, *Pardosa prativaga*, *Pardosa proxima*, *Philodromus longipalpis*, *Runcinia grammica*, *Theridula gonygaster*, *Xysticus ninnii* in *Zora armillata*. Predstavljeni sta tudi novi najdbi vrste *Nesticus idriacus* Roewer, 1931, ki je v Sloveniji veljala za izumrlo, in predlog za njeno premestitev v skupino redkih vrst (R) po klasifikaciji ogroženosti IUCN.

Ključne besede: nove najdbe, pajki, Slovenija, favnistika

## Introduction

Initial records on Slovenian spider fauna, contributed by Scopoli (1763), were followed by several sporadic works by various authors during the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Nevertheless, the greater part of the arachnological research in Slovenia was contributed by the late Dr Anton Polenec in the second half of the 20<sup>th</sup> century (reviewed in Kuntner & Šereg 2002). His rich legacy consists of more than 70 publications on the spiders of Slovenia, including the first and so far the only checklist of the Slovenian spider fauna, citing 416 spider records (Nikolić & Polenec 1981). This number has been almost doubled in the ensuing years, mainly by contributions of the next generation of Slovenian arachneologists (e.g. Kuntner & Kostanjšek 2000, Fišer & Kostanjšek 2001, Kuntner & Šereg 2002, Kostanjšek & Miller 2004, Kostanjšek & Fišer 2005, Gregorič & Kuntner 2009), resulting in almost 700 records of spider species in Slovenia to date.

Although the number of recorded spider species has almost doubled in recent two decades, the knowledge of the Slovenian spider fauna is still considered incomplete. Regarding the number of spider species in some countries with similar surface area to Slovenia and more complete knowledge of the spider fauna (e.g. Austria with 984 species, Slovakia 906, Switzerland 945, Czech Republic 841 species (Blick *et al.* 2004) and Hungary with 725 species (Samu & Szinetár 1999)), at least another fifty to hundred spider species are expected to be found in Slovenia.

The prime objective of this new series of contributions to the Slovenian spider fauna is to encourage further and more regular publishing of new and interesting spider records in Slovenia, in order to provide for a much needed comprehensive overview of the Slovenian spider fauna.

## Material and methods

The present study includes new records for the Slovenian spider fauna, retrieved during the recent reorganization and survey of the spider collection at the Chair of Zoology in the Department of Biology, Biotechnical Faculty, University of Ljubljana. The collection includes mainly material gathered by students during their practical courses, individual projects and the Students Biology Research Camps (RTŠB), as well as personal collections of the author and his associates at the Chair of Zoology.

Specimens were identified according to various determination keys and published descriptions (Levi 1967, Thaler 1981, Loerbroks 1983, Roberts 1993a, b, 1995, Heimer & Nentwig 1991, Melic 2000, Yoshida 2001, Nentwig *et al.* 2010). The systematics and nomenclature of the determined spiders follow Platnick (2010).

For each species, data on the collected material including description of the collecting site, geographic latitude and longitude in Gauß-Krüger coordinates, altitude in meters above sea level (a. s. l.), as well as data on the material provider (leg.) and determinator (det.) of the species are given, when available. Coordinates and geographic descriptions of the collecting sites follow Atlas okolja of the Slovenian Environment Agency. Descriptions of the collected material are followed by data on distribution of the species in other countries in the region and comments on the finding.

## Results and discussion

### *Aphantaulax trifasciata* (O. P.-Cambridge, 1872) - Gnaphosidae

- 2 ♂ - meadow, 1 km W from Osp village; Y=410185, X=48545; 40 m a. s. l.; 20.7.2004; leg.: RTŠB 2004, det. Kostanjšek R.
- 1 ♀ - forest; 50 m NE from Podpeč village near Hrastovlje; Y=415075, X=42735; 440 m a. s. l.; 15.7.2004; leg.: RTŠB 2004, det. Kostanjšek R.

Distribution and comment: the distribution of the species is generally considered Palearctic (Platnick 2010), although the species is absent from Central Europe (Blick *et al.* 2004), Britain and Scandinavia. Its range in Europe extends from Portugal, through Mediterranean countries and the Balkans to Russia (Nentwig *et al.* 2010). Since *A. trifasciata* has been recorded in Serbia (Deltshev *et al.* 2003), as well as in Italy (Stoch 2003) and Croatia (Nikolić & Polenec 1981), the finding of the species in the warm and arid Karst region in south-western Slovenia did not come as a surprise.

### *Nomisia exornata* (C. L. Koch, 1839) - Gnaphosidae

- 1 ♀ - rock wall in Mišja peč 620 m SE of Osp village; Y=411670, X=47669; 100 m a. s. l.; 20.7.2004; leg.: RTŠB 2004; det.: Kostanjšek R.

Distribution and comment: the range of this ant-eating species in Europe is similar to that of *A. trifasciata*, with additional records from Switzerland among Central European countries (Blick *et al.* 2004). Among countries in the region, the species has been recorded from Hungary (Samu & Szinetár 1999), Italy (Stoch 2003), Croatia (Nikolić & Polenec 1981) and Serbia (Deltshev *et al.* 2003). The species inhabits dry and hot environments, which are common in the Kraški rob (Karst Edge) region of Slovenia, where the species has been found.

### *Araneus triguttatus* (Fabricius, 1793) - Araneidae

- 1 ♀ - forest, Osek 1.3 km S from Šempas village; Y=404902, X=87258; 300 m a. s. l.; May 1998; leg.: Humar M., det. Gregorič M., Knapič T.

Distribution and comment: the species is Holarctic (Platnick 2010) and widely spread throughout Europe (Blick *et al.* 2004, Nentwig *et al.* 2010). Although the species is rarer than the morphologically similar *A. sturmi* (Roberts *et al.* 1995), the presence of *A. triguttatus* in Slovenia was, in a way, expected.

***Arctosa cinerea*** (Fabricius, 1777) - Lycosidae

- 1 ♀ - gravel bank of Idrijca river, near Reka village; Y=417359, X=108228; 260 m a. s. l.; 28.7.2000; leg.: RTŠB 2000; det.: Kostanjšek R.

Distribution and comment: this fairly large species is spread throughout Europe, including all countries neighbouring Slovenia. The presence of *A. cinerea* in Slovenia has been already assumed (Nikolić & Polenec 1981), yet not confirmed so far. The species is well adapted to water habitats like waterbeds and lake sides, where it can even live submerged in its silk-lined burrows for a considerable amount of time. Due to its presence in the neighbouring countries, the record of *A. cinerea* in Slovenia was certainly expected.

***Pardosa agricola*** (Thorell, 1856) - Lycosidae

- 1 ♂, 5 ♀ - meadow, 50 m S of Hruški vrh Peak in the Karavanke Mountains; Y=424090, X=149050; 1,700 m a. s. l.; 18.7.1999; leg.: Fišer C., Šereg I.; det.: Gregorič M., Knapič T.

***Pardosa prativaga*** (L. Koch, 1870) - Lycosidae

- 1 ♀ - arid meadow, 3.5 km N from Kostanjevica na Krki village; Y=533194, X=81424; 150 m a. s. l.; 26.7.2009; leg.: RTŠB 2009; det.: Kostanjšek R.
- 2 ♂, 1 ♀ - damp meadow, 250 m NW from the main building of Department of Biology on Večna pot in Ljubljana; Y=459208, X=101103; 300 m a. s. l.; 7.5.2003 and 20.5.2003; leg. Gregorič M., det. Kostanjšek R.

***Pardosa proxima*** (C. L. Koch, 1847) - Lycosidae

- 2 ♀ - arid meadow, 150 m NW from the main building of Department of Biology on Večna pot in Ljubljana; Y=459330, X=101087; 300 m a. s. l.; 23.4.2003; leg. & det. Gregorič M.
- 1 ♂ - near pond, Brdo pri Kranju; Y=454290, X=127681; 470 m a. s. l.; 27.6.2004; leg. & det.: Kostanjšek R.
- 1 ♀ - arid meadow, 3.2 km SW from Rečica ob Savinji village; Y= 492108, X=128868; 395 m a. s. l.; 27.7.2007; leg.: RTŠB 2007, det.: Gregorič M.

Distribution and comment: all three above listed species of the genus *Pardosa* are widespread throughout Europe (Blick *et al.* 2004, Nentwig *et al.* 2010), including all countries neighbouring Slovenia (Nikolić & Polenec 1981, Samu & Szinetár 1999, Stoch 2003). Their presence in Slovenia was therefore more or less expected, confirming therefore previous assumptions on the presence of *P. agricola* and subspecies *P. proxima poetica* in Slovenia (Nikolić & Polenec 1981).

***Zora armillata*** Simon, 1878 - Zoridae

- 1 ♀ - forest; Krakovski gozd, 2.2 km N from Kostanjevica na Krki village; Y=533134, X=80111; 150 m a. s. l.; 26.7.2009; leg.: RTŠB 2009, det.: Kostanjšek R.

Distribution and comment: the species is distributed from Europe to Russia (Platnick 2010) and present in most of the countries of Central Europe, where the species is associated with wet habitats and relatively rarely found (Roberts 1995). Among the neighbouring countries, the species has been recorded from Austria (Blick *et al.* 2004), Hungary (Samu & Szinetár 1999) and Italy (Stoch 2003).

***Nurscia albomaculata*** (Lucas, 1846) - Titanoecidae

- 1 ♂, 5 ♀ - sea shore, Bonifika, Ankaran; Y=401950, X=48580, 0 m a. s. l.; 14.7.2004; leg.: RTŠB 2004; det.: Kostanjšek R.
- 2 ♂, 5 ♀ - meadow, 150 m S from Cape Ronek Peak near Strunjan; Y=392369, X=44550, 60 m a. s. l.; 17.7.2004; leg.: RTŠB 2004; det.: Kostanjšek R.
- 1 ♂, - meadow, 300 m N from Cape Ronek Peak near Strunjan; Y=392790, X=44345, 60 m a. s. l.; 14.7.2004; leg.: RTŠB 2004; det.: Kostanjšek R.

Distribution and comment: beside the site from Germany (Blick *et al.* 2004), the range of the species in Europe spreads from the Iberian Peninsula to France, Italy (Stoch 2003, Nentwig *et al.* 2010) and the Balkan Peninsula (Nikolić & Polenec 1981, Nentwig *et al.* 2010) and further into Central Asia (Platnick 2010). All three collection sites listed above are located on Slovenian coast in warm, sunny habitats, which are preferred by species according to Nentwig *et al.* (2010).

***Philodromus longipalpis*** Simon, 1870 - Philodromidae

- 1 ♀ - forest, northern slope of the Kutošev breg hill, 1 km NW from Šalovci village, Goričko region; Y=597389, X=187700; 270 m a. s. l.; 23.7.1999; leg.: RTŠB 1999, det.: Kostanjšek R.
- 2 ♀ - forest, 500 m W from Gorje pri Cerknem village; Y=420558, X=112339; 650 m a. s. l.; 27.7.2000; leg.: RTŠB 2000, det.: Kostanjšek R.
- 1 ♀ - arid meadow and forest edge, S of Stepani, E from Dekani village; Y=411090, X=45500; 140 m a. s. l.; 12.6.2004; leg. Fišer C., det.: Kostanjšek R.
- 1 ♀ - meadow, 700 m NE from village Modrejce, S of Tolmin; Y=403940, X=114607; 160 m a. s. l.; 22.7.2010; leg.: RTŠB 2010, det.: Kostanjšek R.

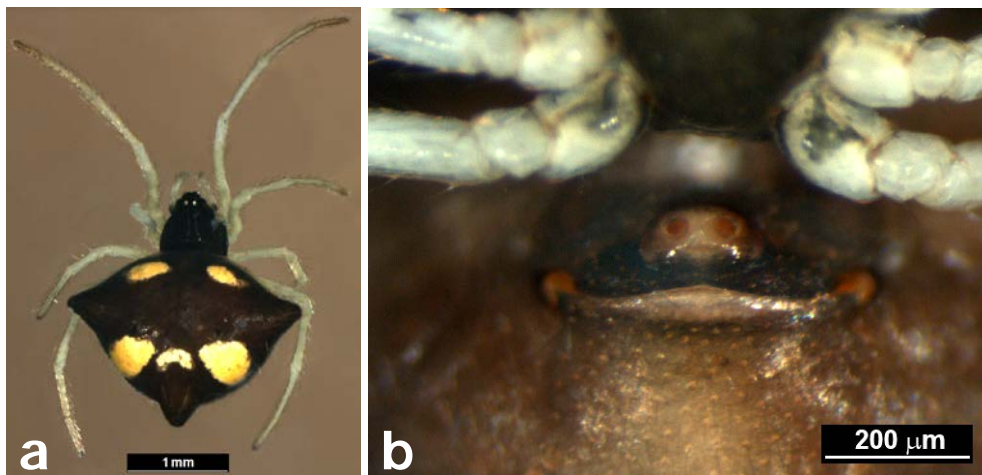
Distribution and comment: the species has been recorded in most European countries (Blick *et al.* 2004), including all countries neighbouring Slovenia (Nikolić & Polenec 1981, Samu & Szinetár 1999, Stoch 2003, Nentwig *et al.* 2010), except Austria. Therefore, the species is another in the list of previously expected (Nikolić & Polenec 1981), yet unconfirmed spider species in Slovenia so far.

***Theridula gonygaster*** (Simon, 1873) - Theridiidae

- 1 ♀ - meadow, 500 m SW from Most na Soči; Y=402925, X=112650, 210 m a. s. l.; 24.7.2010; leg.: Knapič T., det.: Kostanjšek R.
- 1 ♀ - damp meadow, eastern spring of Lamošček stream, E of Bavconov vrh peak near Šempeter pri Gorici; Y=398268, X=87791; 180 m a. s. l.; 4.8.2010; leg.: Vinko D., det.: Knapič T. Kostanjšek R.

Distribution and comment: although *T. gonygaster* is considered cosmopolitan (Platnick 2010), the confirmed records on its presence in Europe are restricted to the south-western part of Europe. Since species has been recorded only from Corsica (Simon 1873), parts of Italy (Brignoli 1969, Stoch 2003) and relatively recently from Spain (Melic 2000), the species is considered rare. Therefore, the records of *T. gonygaster* on two sites in Slovenia during the same season are probably amongst the most interesting findings in recent year. Despite its relatively small size, with body length of approximately 2 mm, the species has a distinctive habitus with glossy black cephalothorax and dark brown abdomen with several well defined yellow markings. Abdomen is broader than long, with two lateral and posterior tuberculum,

which gives it distinctive rhomboidal appearance (Figure 1a). Beside its distinctive habitus, the species has been determined by the outer morphology of female genitalia (Levi 1967, Melic 2000, Yoshida 2001) (Figure 1b). Since the species is considered rare and restricted to warm climate, two records of *T. gonygaster* in western Slovenia during the same season might be explained by so far unrecorded local geographical or seasonal distribution of the species. Although it is tempting to speculate on climate change and spreading of the species' range towards the north due to global warming, it cannot be excluded that the species has often been simply overlooked due to its size.



**Figure 1.** Dorsal view of a female *Theridula gonygaster* (a) and ventral view of its epigine (b).

**Slika 1.** Samica pajka *Theridula gonygaster* s hrbtne strani (a) in njena epigina z ventralne strani (b).

***Cnephalocotes obscurus*** (Blackwall, 1834) - Linyphiidae

- 1 ♂ - quarry, 240 m SW of Slepšek, W of Mokronog village; Y=50997, X=88839; 280 m a. s. l.; 24.7.2009; leg.: RTŠB 2009, det.: Kostanjšek R.
- 1 ♀ - arid meadow, 560 m E of Mokronog village; Y=512289, X=88900; 250 m a. s. l.; 22.7.2009; leg.: RTŠB 2009, det.: Kostanjšek R.

Distribution and comment: the species is considered Palearctic (Platnick *et al.* 2010) and has been recorded throughout Europe, including Austria (Blick *et al.* 2004) and Italy (Stoch 2003) and Serbia among countries in the region (Deltshv *et al.* 2003). With its body length less than 2 mm, the species might be easily overlooked. However, the distinctive reproductive organs, especially male palpus, enable relatively easy and unambiguous determination of this species. The finding is the first record of the genus in Slovenia.

***Helophora insignis*** (Blackwall, 1841) - Linyphiidae

- 1 ♀ - entrance of the Bilpa cave, S of Kočevje; Y=497460, X=41084; 250 m a. s. l.; 20.7.2008; leg.: RTŠB 2008, det.: Kostanjšek R.

Distribution and comment: the species is Holarctic, recorded throughout Europe (Nentwig *et al.* 2010), including all countries neighbouring Slovenia, except Croatia (Samu & Szinetár 1999, Stoch 2003, Blick *et al.* 2004). Being the only species of the genus in Europe, the record also yields the first data on the genus in Slovenia.

***Runcinia grammica*** (C. L. Koch, 1837) - Thomisidae

- 1 ♀ - meadow, 150 m S from Cape Ronek Peak near Strunjan; Y=392369, X=44550, 60 m a. s. l.; 14.7.2004; leg.: RTŠB 2004; det.: Kostanjšek R.
- 1 ♀ - meadow E from road, 500 m NEE from Marezige village; Y=407340, X=41300; 280 m a. s. l.; 16.7.2004; leg.: RTŠB 2004, det.: Kostanjšek R.
- 1 ♀ - arid meadow, 400 m S of Šternci, S from Sv. Peter nad Dragonjo village; Y=396655, X=35165; 80 m a. s. l.; 9.6.2004; leg. & det.: Kostanjšek R.
- 1 ♀ - arid meadow and bush, W from road, 500 m N of Kopriva village, N from Sežana; 280 m a. s. l.; 30.3.2004; leg.: Fišer C., det.: Kostanjšek R.
- 1 ♂ - meadow, 50 m E of St. Duh Church at Sveti Peter nad Dragonjo village; Y=397110, X=36300; 210 m a. s. l.; 12.6.2004; leg. & det.: Kostanjšek R.
- 4 ♂ - arid meadow 60 m SE of Sv. Trojica Church at Hrastovlje; Y= 414630, X=41160; 160 m a. s. l.; 11.6.2004; leg.: Fišer C., det.: Kostanjšek R.

Distribution and comment: the species is Palearctic (Platnick 2010), common in South Europe and rather rare in Central Europe (Heimer & Nentwig 1991). It has been recorded from all countries neighbouring Slovenia, except Austria (Nikolić & Polenec 1981, Samu & Szinetár 1999, Stoch 2003, Blick *et al.* 2004). The species is quite common in the Slovenian Karst region and it came as a surprise that beside the students field reports (e.g. Kostanjšek 2005), the species and the genus have not been properly recorded so far.

***Heriaeus hirtus*** (Latreille, 1819) - Thomisidae

- 3 ♂ - meadow, 750 m W from Tinjan village; Y=408515, X=46850; 300 m a. s. l.; 17.7.2004; leg.: RTŠB 2004, det.: Kostanjšek R.
- 1 ♀ - rock wall 500 m S of Dragonja village; Y=395625, X=35080; 60 m a. s. l.; 16.7.2004; leg.: RTŠB 2004, det.: Kostanjšek R.
- 2 ♂, 1 ♀ - arid meadow, 400 m S of Šternci, S from Sv. Peter nad Dragonjo village; Y=396655, X=35165; 80 m a. s. l.; 9.6.2004; leg. & det.: Kostanjšek R.
- 1 ♀ - meadow, 400 m S of Sv. Duh Church in Sv. Peter nad Dragonjo village; Y=397100, X=35825; 200 m a. s. l.; 9.6.2004; leg. & det.: Kostanjšek R.
- 1 ♂ - bush and meadow, 1 km S from St. Duh Church in Sveti Peter nad Dragonjo village; 12.6.2004; leg.: Fišer C., det.: Kostanjšek R.
- 2 ♂ - arid meadow 60 m SE of Sv. Trojica Church in Hrastovlje; Y= 414630, X=41160; 160 m a. s. l.; 11.6.2004; leg.: Fišer C., det.: Kostanjšek R.
- 2 ♀ - arid meadow and forest edge, S of Stepani, E from Dekani village; Y=411090, X=45500; 140 m a. s. l.; 12.6.2004; leg. Fišer C., det.: Kostanjšek R.

Distribution and comment: the species' range spreads throughout Southern Europe, from the Iberian to the Balkan Peninsulas. It has been recorded from all countries neighbouring

Slovenia, except Austria (Nikolić & Polenec 1981, Samu & Szinetár 1999, Stoch 2003, Blick *et al.* 2004). Although the genus can be easily recognized by its distinctive hairy appearance and has been recorded in Slovenia previously (Kuntner 1997, Kuntner & Šereg 2002), the determination at the species level can be challenging due to the similar outer anatomy of genitalia within the genus (Loerbroks 1983). The same as *R. grammica*, *H. hirtus* is commonly found during the summer in warmer and arid habitats of the Karst region, and has therefore been expected in Slovenia.

***Xysticus ninnii*** Thorell, 1872 - Thomisidae

- 5 ♀ - meadow, 1.5 km S from Zagozdec village, SW of Črnomelj; Y=505008, X=41175; 400 m a. s. l.; 20.7.2008; leg.: RTŠB 2008, det.: Kostanjšek R.
- 1 ♀ - meadow; 500 m NE of Kal nad Kanalom village; S of Most na Soči; Y=403336, X=105527; 740 m a. s. l.; 25.7.2010; leg.: RTŠB 2010, det.: Kostanjšek R.
- 1 ♀ - meadow; 440 m NE of Bata village; S of Most na Soči; Y=398311, X=101279; 660 m a. s. l.; 25.7.2010; leg.: RTŠB 2010, det.: Kostanjšek R.

Distribution and comment: the species is distributed throughout Europe (except Britain and Scandinavia (Nentwig *et al.* 2010)), including all countries neighbouring Slovenia (Nikolić & Polenec 1981, Samu & Szinetár 1999, Stoch 2003, Blick *et al.* 2004). Therefore, a record of this Palearctic species in Slovenia has been expected (Nikolić & Polenec 1981).

***Nesticus idriacus*** Roewer, 1931 - Nesticidae

- 1 ♀ - Čendova jama cave (cave cadastre No. 2903), Ponikve S from Kneža village; Y=409420, X=112390; 570 m a. s. l.; 3.6.2009; leg.: Zagmajster M., Trontelj P., Prevorčnik S., Lah L., det. Kostanjšek R.

Distribution and comment: the species is endemic to northeast Italy (Thaler 1981, Stoch 2003), Austria (Thaler 1981, Blick *et al.* 2004) and Slovenia. Due to destruction of its finding site in Ciganska jama near Črni vrh in Trnovski gozd forest (Nikolić & Polenec 1981), the species has been considered extinct according to the IUCN classification in the previous (Polenec 1992) as well as current Red list of endangered species in Slovenia (Pravilnik o uvrstitvi ogroženih rastlinskih in živalskih vrst v rdeči seznam - UL RS 82/4055). Despite its status, a male *N. idriacus* has been recorded from Golerjev ali Jamniški pekel cave in northwestern Slovenia (Kranjc & Novak 1977, Novak 2005), followed by recent record of a female in Čendova jama cave listed above. Since the above mentioned records clearly indicate recent presence of the species in Slovenia, a transfer of *N. idriacus* to the IUCN »rare« (R), the same as other endemic cave spiders in Slovenia, should be made.



## Povzetek

Prispevek je prvi v seriji prispevkov o favni pajkov Slovenije, vzpostavljeni z namenom spodbujanja objav novih zanimivih najdb pajkov na območju Slovenije, saj je kljub večjemu številu novih najdb pajkov v zadnjem desetletju poznavanje slovenske aranaeofavne še vedno nepopolno. Prispevek obravnava 16 vrst pajkov, ki do sedaj v Sloveniji še niso bile najdene, in sicer: *Aphantaulax trifasciata* (O. P.-Cambridge, 1872), *Araneus triguttatus* (Fabricius, 1793), *Arctosa cinerea* (Fabricius, 1777), *Cnephalocotes obscurus* (Blackwall, 1834), *Helophora insignis* (Blackwall, 1841), *Heriaeus hirtus* (Latreille, 1819), *Nomisia exornata* (C. L. Koch, 1839), *Nurscia albomaculata* (Lucas, 1846), *Pardosa agricola* (Thorell, 1856), *Pardosa prativaga* (L. Koch, 1870), *Pardosa proxima* (C. L. Koch, 1847), *Philodromus longipalpis* Simon, 1870, *Runcinia grammica* (C. L. Koch, 1837), *Theridula gonygaster* (Simon, 1873), *Xysticus ninnii* Thorell, 1872 in *Zora armillata* Simon, 1878. Predstavljeni sta tudi novi najdbi vrste *Nesticus idriacus* Roewer, 1931, ki je v Sloveniji veljala za izumrlo, in predlog za njeno premestitev v skupino redkih vrst (R) po klasifikaciji ogroženosti IUCN.

Poleg nekaterih redkih vrst, kot na primer *T. gonygaster*, je pojavljanje večine v prispevku predstavljenih vrst v Sloveniji pričakovano. Prav presenetljivo pa je dejstvo, da doslej nismo imeli nobenih objav o vrstah, kakršni sta *H. hirtus* in *R. grammica*, ki sta razmeroma pogosti v jugozahodni Sloveniji, kar pa očitno govori o nezadostni raziskanosti aranaeofavne v nekaterih predelih Slovenije.

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