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New data on spiders (Arachnida: Aranei) of the Altai Republic, Russia
Новые данные о пауках (Arachnida: Aranei) Республики Алтай (Россия)

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KEY WORDS: Russian Altai, Aranei, spiders, new records.
КЛЮЧЕВЫЕ СЛОВА: Алтай, Aranei, пауки, новые находки.

ABSTRACT. A survey of 14 species found in the Altai, for the first time is presented. The male of *Drassodes katunensis* Marusik, Hippa & Koponen, 1996, is described for the first time. Two species: *Gnaphosa banini* Marusik & Koponen, 2001, and *Pardosa nenilini* Marusik, 1995, are recorded from Russia for the first time. Species new to Russia and *D. katunensis* are illustrated.

РЕЗЮМЕ. Приводится обзор 14 видов найденных на Алтае впервые. Впервые описан самец *Drassodes katunensis* Marusik, Hippa & Koponen, 1996. Два вида: *Gnaphosa banini* Marusik & Koponen, 2001 и *Pardosa nenilini* Marusik, 1995 впервые приводятся для фауны России. Виды, новые для России и *D. katunensis* проиллюстрированы.

Introduction

Araneofauna of the Russian Altai remains poorly studied. There are some sporadic publications dealing with Altaian spiders [Simon, 1895; Ermolajev, 1928; 1937; Lyakhov, 1992; Ovtsharenko et al. 1992, 1995; Logunov & Marusik, 1994; Marusik et al., 2004; Logunov & Marusik, 2000; Tanasevitch, 2000; Marusik & Koponen, 2001; Marusik & Fomichev, 2010; Fomichev & Marusik, 2011]. Only three faunistic papers are connected exclusively with Altaian spiders: Marusik at al. [1996], Levina & Mikhailov [2004] and Marusik & Logunov [2009]. According to Marusik & Logunov [2009] the total number of species reported from the Russian part of Altai is about 320. This number of species is rather low. For example, neighbouring Tuva harbours 614 species [Marusik et al., 2000]. Such striking difference between Tuva and Altai can be explained by the inadequate level of study of the Altaian fauna.

While studying the newly collected material we found 14 species new to Altai and one endemic species (*Drassodes katunensis* Marusik et al., 1996).The male of this species was previously unknown. Two species were found to be new for Russia. Goal of this paper is commenting on species found in Altai and Russia for the first time, and to provide first description of the male of *D. katunensis.*

Material and methods

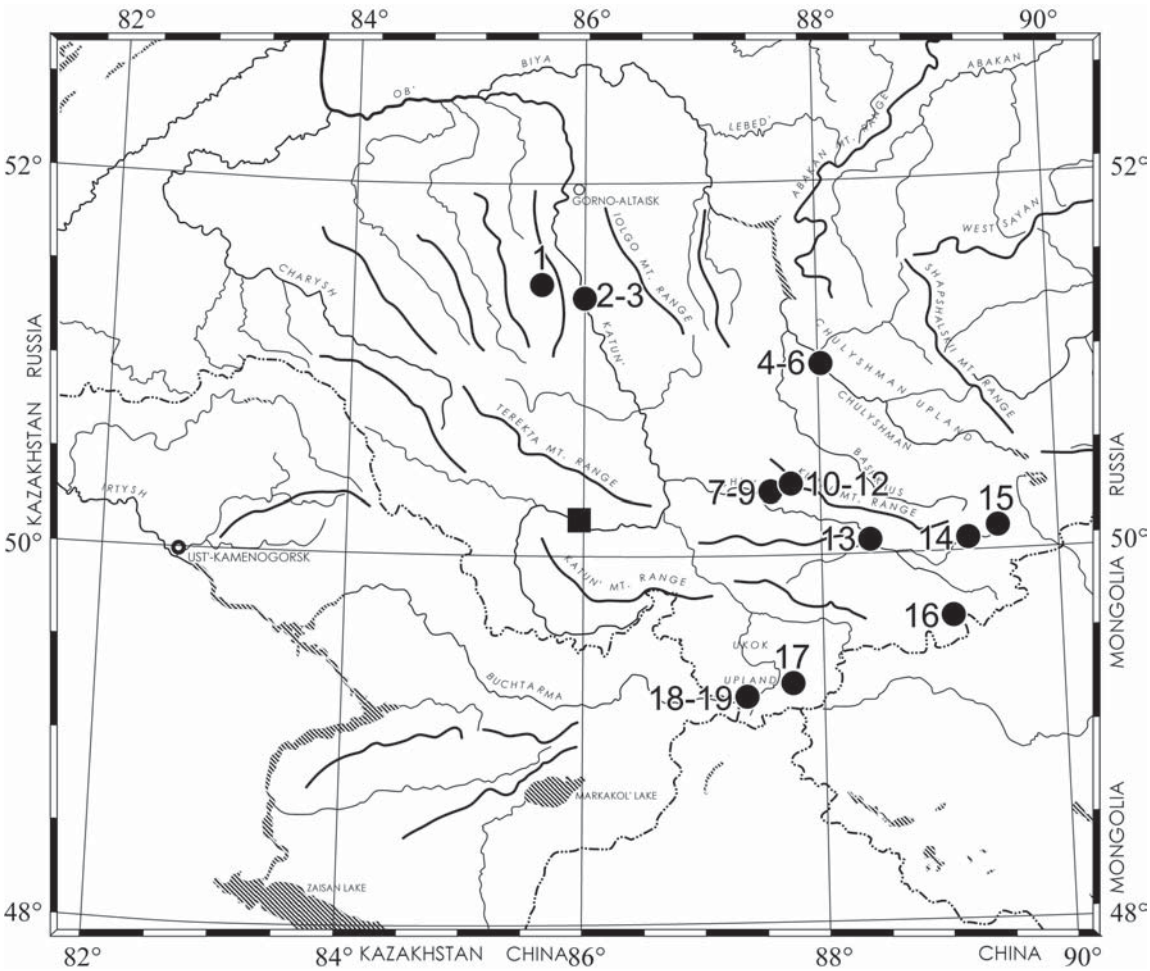
Material was collected by the senior author during his two fieldtrips to the Altai Mountains in July 4–25, 2009 and June 27 – July 8, 2010. The study area is limited by the boundaries of the Altai Republic of Russia. Detailed data of localities and habitats in which spiders were collected are given below. Specimens were photographed using either Olympus Camedia E-520 camera attached to an Olympus SZX16 stereomicroscope or AxioCam MRc5 (Zeiss) camera attached to a Stemi 2000 — C stereomicroscope. Images from different focal planes were combined with "Helicon focus 3.10" image stacking software (www.heliconsoft.com). Photographs were taken in a dish with paraffin in the bottom. Epigynes were macerated in a 10% KOH solution.

All measurements are given in millimeters. Material will be deposited in the Siberian Zoological Museum, Novosibirsk (SZMN).

Localities:

1. Barlak Village (51°29'N, 85°33'E), stony outcrops, 500 m, 04.07.2009.

2. Elekmonar Village (51°28'N, 86°00'E), mixed forest (pine with birch), 600 m, 25.07.2009.



Map. Collecting localities of spiders in Altai Republic. Square sign indicates type locality of *Drassodes katunensis.*
Карта. Точки сбора пауков в Республике Алтай. Квадратом показана типовая местность *Drassodes katunensis.*

3. Ditto, steppic slope with rocks, 400 m, 25.07. 2009.

4. Chulyshman River canyon (51°00'N, 88°01'E), bank of stream, 500 m, 09.07.2009.

5. Ditto, sloping steppe with bushes and in shrubby thickets, 600 m, 08.07.2009.

6. Ditto, mountain steppe, 500 m, 08.07.2009.

7. Aktash Village (50°19'N, 87°36'E), synanthropic habitats, 1350 m, 04.07.2009.

8. Ditto, 27.06.2010.

9. Ditto, *Larix* forest, on tree trunk, 1400 m, 11.07. 2009.

10. Kuraisky Mt. Range (50°20'N, 87°44'E), mountain stony tundra, 2500-3000 m, 04.07.2010.

11. Ditto (50°20'N, 87°41'E), rocks on steppe slope, 2000m, 08.07.2010.

12. Ditto, bog in *Pinus sibirica* and *Larix* forest, 2000 m, 08.07.2010.

13. 5 km S of Chagan–Uzun Village (50°04'N, 88°24'E), grassy bank of Chuya River, 1700 m, 13.07. 2009.

14. 22 km NE of Kokorya Village (50°03'N, 89°15'E), stony bank of Buguzun River, 2000 m, 28.06. 2010.

15. Chikhacheva Mt. Range, Buguzun Mt. Pass (50°11'N, 89°24'E), tundra-steppe, 2600 m, 02.07. 2010.

16. Ulandryk natural boundary (49°40'N, 89°04'E), rocks, 2300 m, 16.07.2009.

17. Ukok Plateau, Bertek natural boundary, shore of Gusinoe Lake (49°18'N, 87°46), grassy shore of lake, 2200 m, 18.07.2009.

18. Ukok Plateau, near Ukok Lake (49°15'N, 87°22'E), mountain boggy moss-lichen tundra, 2400 m, 19.07.2009.

19. Ditto, pitfall trap in mountain boggy moss-lichen tundra, 2400 m, 19.07.2009.

Taxonomic survey

Following list includes 14 species that are new to Altai. Two of them were found in Russia for the first time. Each species name followed by the number of collected specimens and by a number in the brackets which refers to the number at Map and localities described above. Information about distribution of each species is given.

Family Araneidae

Larinioides cornutus (Clerck, 1757): 1 ♂ [13]; 1 ♂ [18].

COMMENTS. Circum-Holarctic polyzonal range [Marusik et al., 2000]. Although it is widespread and rather common species, it was found in Altai for the first time.

Family Gnaphosidae

Drassodes katunensis Marusik, Hippa & Koponen, 1996

Figs 1–5.

D. infletus: Ermolajev, 1937: 605, f. 6 (♀, misidentification).

D. katuntensis Marusik et al., 1995: 26, f. 61–62 (♀).

MATERIAL. RUSSIA. 1♀1♂, Altai, Aktash Village (50°19'N, 87°36'E), synanthropic habitats, 1350 m, 04.07.2009 (A.A. Fomichev); 1 ♀, Kuraisky Mtn Range (50°20'N, 87°41'E), rocks on the steppe slope, 2000 m, 08.07.2010 (A.A. Fomichev); 3 ♀♀, Chulyshman River canyon (51°00'N, 88°01'E), sloping steppe with bushes and in shrubby thickets, 600 m, 08.07.2009 (A.A. Fomichev).

COMPARATIVE MATERIAL. *D. hebei* Song, Zhu & Zhang, 2004 (Figs 6–8): 1 ♂ 1 ♀ NE China, Hebei Province, NW of Beijing, Damaqun Shan, 40.50472°N 115.81347°E, 11–12.08.2010 (Y.M. Marusik).

DIAGNOSIS. This species is closely related to *D. hebei* (Figs 6–8), known from the Hebei Province of China only. Male of *D. katunensis* differs from *D. hebei* by slightly longer and thinner apical part of cymbium and stronger cymbial spines (Figs 1–2, 6–7). Altaian species has also thinner bulbus and shorter tibial apophysis. Females of two species are almost indistinguishable, they slightly differ by the proportions of fovea (relatively higher in *D. katunensis*).

DESCRIPTION. Male. Total length 10.5. Carapace: 4.5 long, 3.0 wide. Cymbium 1.2 long. Carapace light yellow-brown. Chelicerae brown, with three frontal teeth and small posterior tooth (Fig. 3). Sternum light brown. Abdomen yellow-grey. Legs yellow. Femur I with 2 dorsal and 2 prolateral spines. Tibia I with 3 ventral spines. Metatarsus with 2 ventral spines in basal part.

♂/♀	Femur	Patella	Tibia	Metatarsus	Tarsus
Palp	1.50/1.25	0.75/0.60	0.80/0.85	—	1.20/1.05
I	3.60/3.25	2.00/1.75	3.45/2.80	2.80/2.00	1.85/1.50
II	3.40/3.05	1.70/1.65	3.00/2.70	2.90/2.10	1.85/1.55
III	3.25/2.90	1.55/1.40	2.80/2.40	2.65/2.30	1.70/1.50
IV	4.10/3.75	1.90/1.65	3.75/3.40	4.50/3.70	2.00/1.80

Palp as in Figs 1–2. Cymbial spines strong. Retrolateral tibial apophysis short and straight with a small tooth at the top. Median apophysis located almost on the top of tegulum, large, as wide as long . Embolus aciform, slightly curved.

Leg and palp joints length in male with carapace 4.5 long and female with carapace 4.25 long.

Female (n=5). Total length 9.6–11.5. Carapace: 4.25–4.95 long, 3.0–3.5 wide. Epigynal plate 0.63 high and 0.73 wide. Coloration as in male, but metatarsi and tarsi darker and abdomen can be more yellowish. Spination variable, Femur I with 2 or 3 dorsal, and from one to three prolateral spines. Different legs may have different number of spines. Tibia I with 2 ventral spines. Metatarsus with 2 ventral spines near the base. Epigyne as in Figs 4–5 with rounded median plate.

COMMENTS. This species was described on the basis of a single holotype female from Katun' River near Katanda Village (ca 50.185°N, 86.016°E). Material collected in Aktash (ca 114 km from the type locality of *D. katunensis*) contains both female and male. The female matches well to the description and, therefore, we conclude that male can be matched with the female. In addition correctness of matching of the female and the male can be proved by comparison with sibling, or even conspecific *D. hebei* from China. Chinese species described on the basis of both sexes has very similar (if not equal) bulbus and epigyne and may even be conspecific with *D. katunensis*. We are going to compare specimens from Chinese and Altaian populations by mean of their barcodes.

It is worth mentioning that *D. katunensis* was reported from Altai for the first time by Ermolajev [1937] under the name *D. infletus* (O. Pickard-Cambridge, 1885) from the Chuiski Trakt (=Road). Aktash (the present record) is on this road. In our view, Ermolajev's record, supported with a proper illustration of the epigyne fits with Marusik et al. [1996] figures, and is very different from the illustrated description provided by O. Pickard-Cambridge [1885].

DISTRIBUTION. Altai only. Most probably it is an endemic of this region.

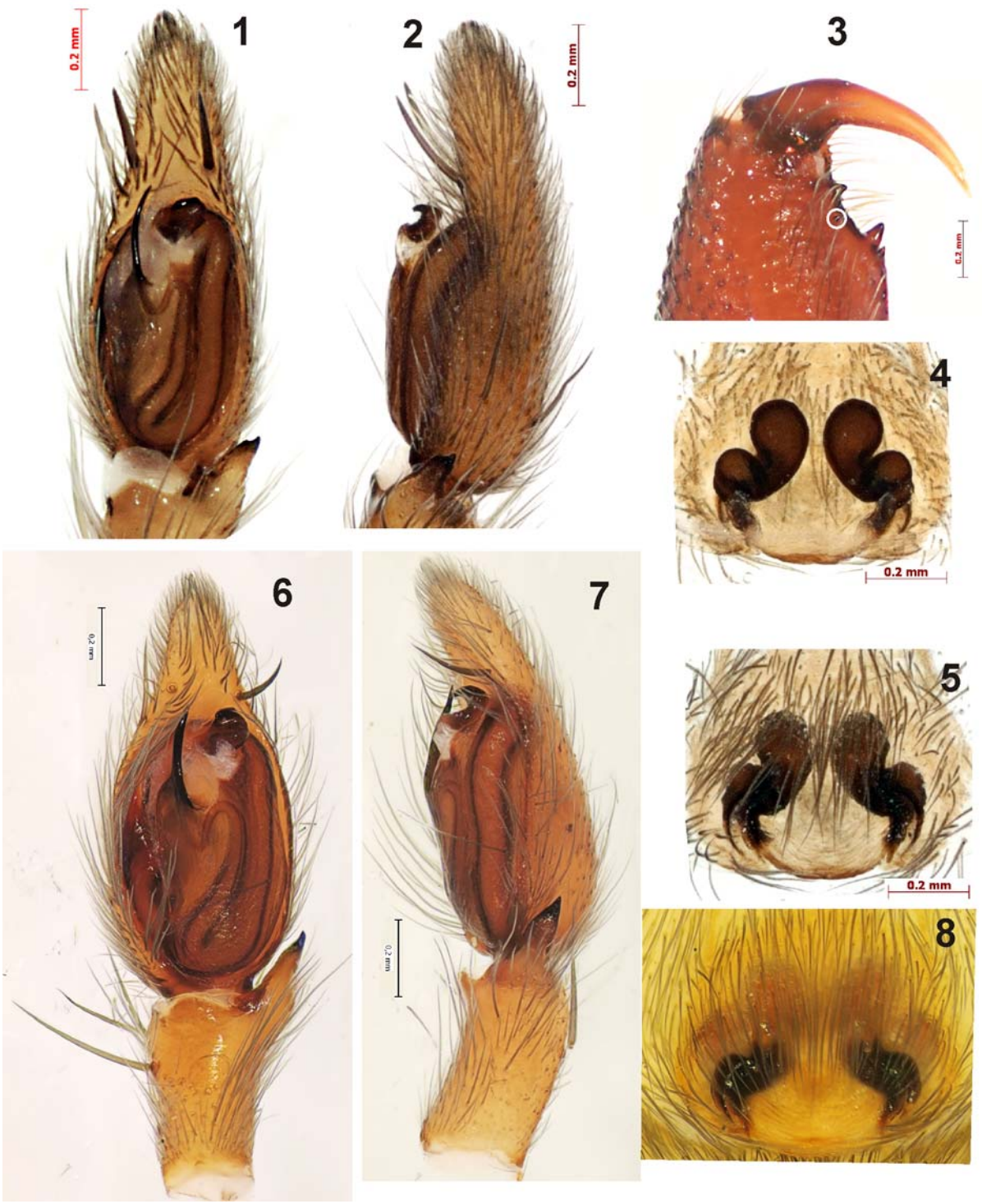
Gnaphosa banini Marusik & Koponen, 2001 (Figs 9–13): 1 ♀ [17]; 1 ♂ [19]; 1 ♀ [15].

COMMENTS. Previously this species was known from Mongolia only [Marusik & Koponen, 2001; Platnick, 2011]. It was found in Russia for the first time. The new record represents north-westernmost locality in its distribution. This species is related to the Holarctic species, *G. orites* Chamberlin, 1922, from which it can be distinguished by the long process (Fig. 9) with parallel sides of the embolic base (claw-like in *G. orites*).

Family Linyphiidae

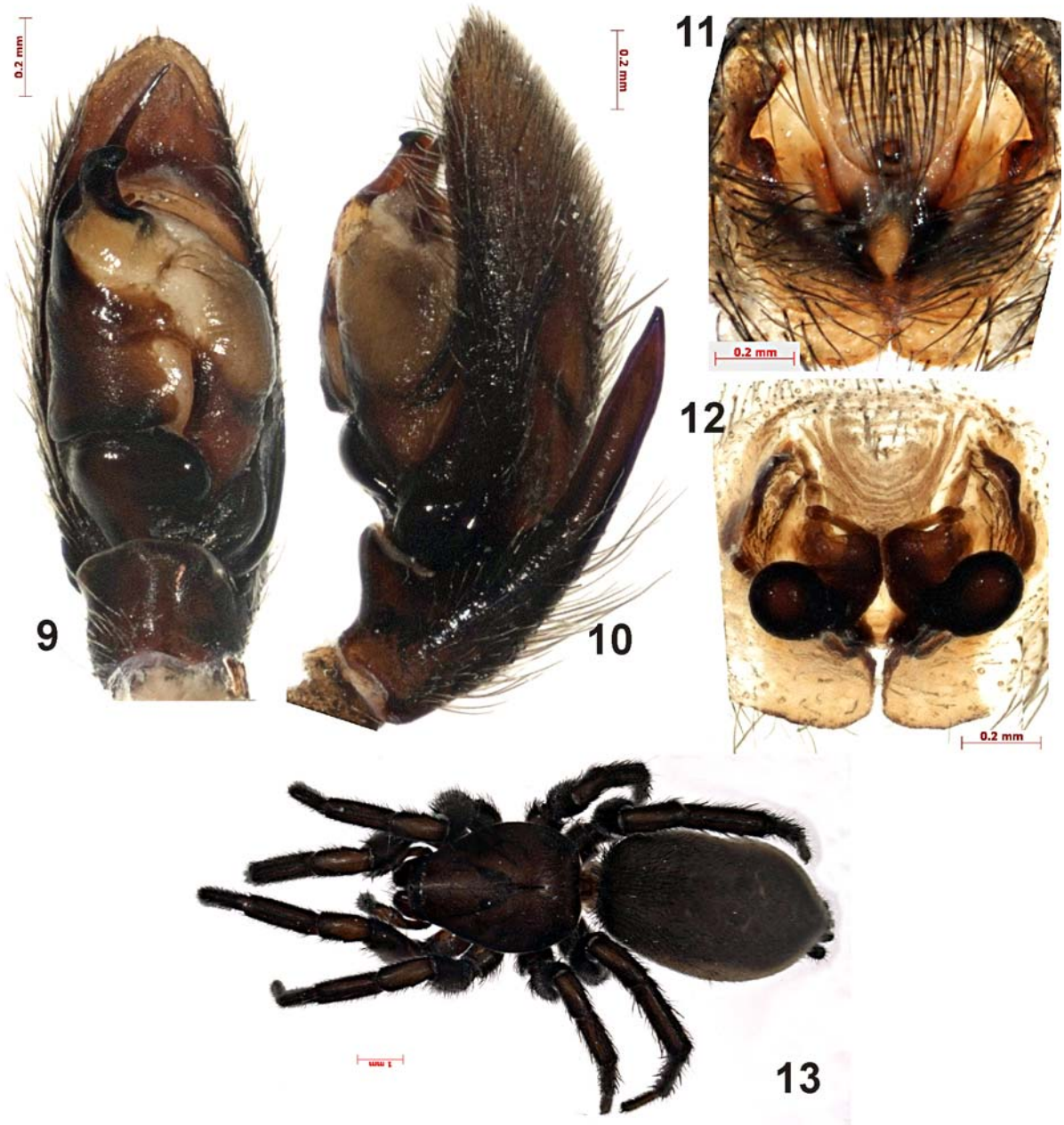
Scotinotylus protervus (L. Koch, 1879): 1 ♀ [10].

COMMENTS. It is widespread species known from the West Siberia through the whole Siberia (including



Figs 1–8. *Drassodes katunensis* (1–5) and *D. hebei* (6–8): 1, 6 — male palp, ventral; 2, 7 — male palp, retrolateral; 3 — male chelicerae, posterior, white circle shows small tooth; 4 — epigyne, dorsal; 5, 8 — epigyne, ventral.

Рис. 1–8. *Drassodes katunensis* (1–5) и *D. hebei* (6–8): 1, 6 — пальпа самца, вентрально; 2, 7 — пальпа самца, ретролатерально; 3 — хелицера самца, сзади, кружком обведён зубец, расположенный на задней стороне хелицеры; 4 — эпигина, дорзально; 5, 8 — эпигина, вентрально.



Figs 9–12. *Gnaphosa banini*: 9, 10 — male palp, ventral and retrolateral; 11, 12 — epigyne, ventral and dorsal; 13 — habitus of female.

Рис. 9–12. *Gnaphosa banini*: 9, 10 — пальпа самца, вентрально и ретролатерально; 11, 12 — эпигина, вентрально и дорзально; 13 — общий вид самки.

northern Mongolia) and northwestern Nearctic [Marusik et al., 2000]. It was found in Altai for the first time.

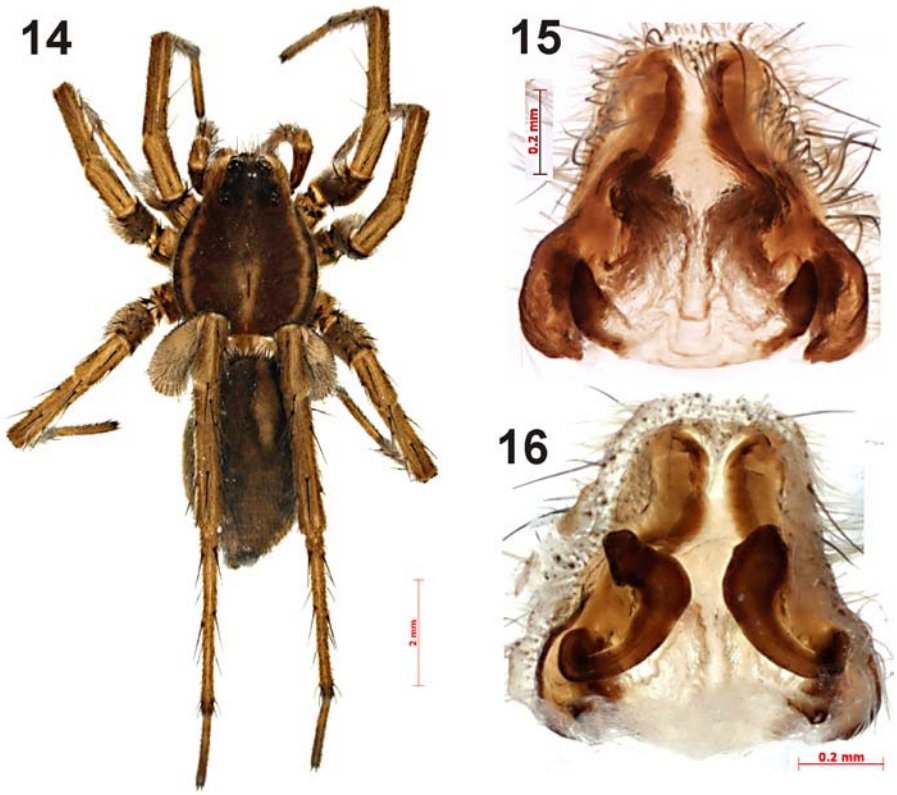
Family Lycosidae

Mustelicosa dimidiata (Thorell, 1875): 1 ♂ [6]; 1 ♂ [8].

COMMENTS. It has Central Palaearctic range and occurs from south Ukraine (Kovblyuk, pers. comm.) to Tuva and Mongolia. Recorded from the Russian Altai for the first time.

Pardosa atrata (Thorell, 1873): 1 ♀ 2 ♂♂ [12].

COMMENTS. This species has trans-Palaearctic range [Marusik et al., 2000]. Although it is known from adjacent Tuva and Mongolia it was never found in Altai before.



Figs 14–16. Female of *Pardosa nenilini*: 14 — habitus; 15, 16 — epigyne, ventral and dorsal.
Рис. 14–16. Самка *Pardosa nenilini*: 14 — общий вид; 15, 16 — эпигина, вентрально и дорзально.

Pardosa nenilini Marusik in Eskov et Marusik, 1995 (Figs 14–16): 1 ♀ [14].

COMMENTS. So far this species is reported from adjacent East-Kazakhstan [Eskov & Marusik, 1995] and Mongolia [Marusik & Logunov, 2000]. It was not found in the Altai and in Russia before. Our record represents the northernmost locality of the range. It is worth mentioning that *P. nenilini* might be conspecific with *P. soccata* Yu et Song, 1988, a species known from Xinjiang.

Family Salticidae

Philaeus chrysops (Poda, 1761): 2 ♀♀ [3].

COMMENTS. This species has trans-Palaearctic range [Logunov & Marusik, 2000]. Although it widely distributed in south Siberia it was never reported from the Altai before.

Phlegra fasciata (Hahn, 1826): 1 ♀ [7].

COMMENTS. This species has trans-Palaearctic range [Logunov & Marusik, 2000]. Although it widely distributed in south Siberia it was never reported from the Altai before.

Phlegra profuga Logunov, 1996: 1 ♀ [16].

COMMENTS. Earlier this species was known from Orenburg Area to Tuva and Mongolia [Logunov & Marusik, 2000]. Our find represents a first record of *P. profuga* in the Altai.

Pseudeuophrys obsoleta (Simon, 1868): 1 ♀ [4].

COMMENTS. This species ranges from Europe to Yenisei River [Logunov & Marusik, 2000]. Although it was known from adjacent Novosibirsk Area, Khakassia and Xinjiang it was never reported from the Altai before.

Sitticus albolineatus (Kulczyński, 1895): 3 ♀♀ [1].

COMMENTS. This species has an East Palaearctic range and was known east of Khakassia and eastern Tuva to Magadan Area [Logunov & Marusik, 2000]. This new find represents the first record in the Altai and is the westernmost locality of its range.

Family Theridiidae

Dipoena torva (Thorell, 1875): 1 ♀ [9].

COMMENTS. This species has Euro-Baikalian range [Mikhailov, 1997]. Our find represents the first record of *D. torva* from the Altai.

Steatoda castanea (Clerck, 1757): 1 ♀ 1 ♂ [7].

COMMENTS. It is known across whole Palaearctic and in Canada to where it was probably introduced [Platnick, 2011]. At least in north Palaearctic it is an

obligatory synanthropic species. *S. castanea* was not known in the Altai before.

Family Zoridae

Zora spinimana (Sundevall, 1832): 2 ♀♀ [2].

COMMENTS. This species has trans-Palaearctic range and is known from Western Europe to Kamchatka [Mikhailov, 1997]. It was not known in the Altai before.

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References

Ermolajew W.1928. Eine neue *Aranea*-Art vom Altai // Zool. Anz. Bd.77. H.9/10. S.209–213.

Ermolajev W. 1937. Beitrag zur Kenntnis der altaischen Spinen // Festschr. Strand. Bd.3. S.596–606.

Eskov K.Y., Marusik Yu.M. 1995. On the spiders from Saur Mt. range, eastern Kazakhstan (Arachnida: Araneae) // Beitr. Araneol. Bd.4. P.55–94.

Fomichev A.A., Marusik Yu.M. 2011. First description of the female of *Acantholycosa logunovi* (Araneae, Lycosidae) // Zootaxa. No.2813. P.65–68.

Levina N.V., Mikhailov K.G. 2004. [Spider (Aranei) fauna of mountainous Altai] // Bull. Moskovsk. obshch. ispyt. prir. Otd. Biol. T.109. Vyp.3. S.38–52 [in Russian, with English summary].

Logunov D.V., Marusik Yu.M. 1994. A faunistic review of the crab spiders (Araneae, Thomisidae) from the mountains of South Siberia // Bull. Inst. Roy. Sci. Natur. Belgique, Entomologie. Vol.64. P.177–197.

Logunov D.V., Marusik Yu.M. 2000. Catalogue of the jumping spiders of northern Asia (Arachnida, Araneae, Salticidae). Moscow: KMK Scientific Press. 299 pp.

Lyakhov O.V. 1992. [*Ebo distinctivus* sp. n. (Araneae, Philodromidae) from the Altai] //Zool. Zhurnal. T.71. Vyp.7. S.147–149 [in Russian].

Marusik Yu.M., Azarkina G.N., Koponen S. 2004. A survey of East Palaearctic Lycosidae (Aranei). II. Genus *Acantholycosa* Dahl, 1908 and related new genera // Arthropoda Selecta. Vol.12. No.2. P.101–148.

Marusik Yu.M., Hippa H., Koponen S. 1996. Spiders from the Altai area, South Siberia // Acta Zoologica Fennica. Vol.201. P.11–45.

Marusik Yu.M., Koponen S. 2001. A new species of the genus *Gnaphosa* (Araneae, Gnaphosidae) from Mongolia and new species records from east Palaearctic // Acta Arachnol. Vol.50. No.2. P.135–144.

Marusik Yu.M., Logunov D.V. 2009. New faunistic records of spiders collected from the mountain Altai // Arthropoda Selecta. Vol.18. No.3–4. P.141–152.

Marusik Yu.M., Logunov D.V., Koponen S. 2000. Spiders of Tuva, South Siberia. Magadan: NESC FEB RAS. 252 pp.

Marusik Yu.M., Fomichev A.A. 2010. A new species of *Parasyrisca* Schenkel, 1963 (Araneae, Gnaphosidae) from the Altai // Zootaxa. No.2626. P.65–68.

Mikhailov K.G. 1997. Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei). Moscow: Zool. Mus. MGU. 416 pp.

Ovtsharenko V.I., Platnick N.I., Marusik Yu.M. 1995. A review of the Holarctic ground spider genus *Parasyrisca* (Araneae, Gnaphosidae) // Amer. Mus. Novit. No.3147. P.1–55.

Ovtsharenko V.I., Platnick N.I., Song D.X. 1992. A review of the North Asian ground spiders of the genus *Gnaphosa* (Araneae, Gnaphosidae) // Bull. Amer. Mus. Natur. Hist. No.212. P.1–88.

Pickard-Cambridge O. 1885. Araneida // Scientific results of the second Yarkand mission. Calcutta. 115 pp.

Platnick N. 2011. The World Spider Catalog, Version 11.5. American Museum of Natural History. Online at: online at http://research.amnh.org/iz/spiders/catalog.

Simon E. 1895. Arachnides recueillis par M. G. Potanine en China et en Mongolie (1876–1879) // Bull. Acad. imp. sci. St.-Petersb. Vol.2. P.331–345.

Song D.X., Zhu M.S., Zhang F. 2004. Arachnida: Araneae: Gnaphosidae. Fauna Sinica: Invertebrata. Vol.39. Beijing: Science Press. 362 pp.

Tanasevitch A.V. 2000. New species of the family Linyphiidae from south Siberia, Russia (Arachnida: Araneae) // Reichenbachia. Bd.33. P.243–253.

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