

New data on the spider (Arachnida: Aranei) fauna of Mangystau Oblast, Kazakhstan

Новые данные о фауне пауков (Arachnida: Aranei) Мангистауской области, Казахстан

Sergei L. Esyunin¹, Viktor E. Efimik¹, Anna A. Nekhaeva^{2,3}, Leonid V. Kim³,
Viktor A. Valuev⁴, Alibi A. Kabdrakhimov⁵, Tatyana K. Tuneva⁶,
Kazhmurat M. Akhmedenov⁵
С.Л. Есюнин¹, В.Е. Ефимик¹, А.А. Нехаева^{2,3}, Л.В. Ким³, В.А. Валуев⁴,
А.А. Кабдрахимов⁵, Т.К. Тунева⁶, К.М. Ахмеденов⁵

¹ Perm State University, Bukireva Street 15, Perm 614600 Russia.

² A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Leninskiy ave. 33, Moscow 119071 Russia.

³ Institute of Zoology, 93 al-Farabi Str., Almaty 050060 Kazakhstan.

⁴ Institute of Ecological Expertise and Bioinformation Technologies, Parkovaya St. 36, Yumatovo village, Ufimsky district, Republic of Bashkortostan 450571 Russia.

⁵ Mahambet Utemisov West Kazakhstan University, Nazarbayev ave. 162, Uralsk 090000 Kazakhstan.

⁶ Institute of Plants and Animals Ecology, the Ural branch of the RAS, 8 March Str. 202, Ekaterinburg 620144 Russia.

¹ Пермский государственный университет, ул. Букирева 15, Пермь 614600 Россия.

² Институт проблем экологии и эволюции им. А.Н. Северцова РАН, Ленинский проспект 33, Москва 119071 Россия.

³ Институт зоологии Республики Казахстан, аль-Фараби 93, Алматы 050060 Казахстан.

⁴ Институт экологической экспертизы и биоинформационных технологий, ул. Парковая 36, Юматово деревня, Уфимский район, Республика Башкортостан 450571 Россия.

⁵ Западно-Казахстанский университет имени М. Утемисова, проспект Назарбаева 162, Уральск 090000 Казахстан.

⁶ Институт экологии растений и животных УрО РАН, ул. 8 Марта 202, Екатеринбург 620144 Россия.

Sergei Esyunin: esyunin@mail.ru ORCID <https://orcid.org/0000-0003-3813-1316>

Viktor Efimik: efimik.viktor@mail.ru ORCID <https://orcid.org/0000-0002-9044-1074>

Anna Nekhaeva: adrealinea@gmail.com ORCID <https://orcid.org/0000-0002-4972-2122>

Leonid Kim: kim.leonid2606@mail.ru ORCID <https://orcid.org/0000-0003-1916-7639>

Viktor Valuev: valuyevva@mail.ru ORCID <https://orcid.org/0009-0000-7029-1593>

Alibi Kabdrakhimov: Kab.ali93@mail.ru ORCID <https://orcid.org/0000-0002-3721-1691>

Tat'yana Tuneva: tuneva@ipae.uran.ru ORCID <https://orcid.org/0000-0001-8544-4943>

Kazhmurat Akhmedenov: kazhmurat78@mail.ru ORCID <https://orcid.org/0000-0001-7294-0913>

KEY WORDS: Araneae, spider, fauna, new species, new synonym, new records, southern-western Kazakhstan.

КЛЮЧЕВЫЕ СЛОВА: Araneae, пауки, фауна, новые виды, новый синоним, новые указания, юго-западный Казахстан.

ABSTRACT. A list of 84 spider species of Mangystau Oblast is provided, with the family Dysderidae and 39 species being recorded from there for the first time; five species are first found in Kazakhstan: viz., *Argiope ahngeri* Spassky, 1932, *Uroctea grossa* Roewer, 1960, *Oxyopes badhyzicus* Mikhailov et Fet, 1986, *Evarcha nenilini* Rakov, 1997, and *Theridion arsia* Zamani et Marusik, 2021. Distribution of all species that are new to Kazakhstan and Mangystau Oblast is discussed. Three species are described as new: viz., *Eresus mangyshlakensis* sp.n. (♂), *Lycosa kuryk* sp.n. (♀), *Xysticus utochkini* sp.n. (♂). A new synonymy has been established: *Minosia simeonica* Levy, 1995, syn.n. = *Minosia karakumensis* (Spassky, 1939). Based on the results of the present study and earlier published data, the total number of spider

species recorded from Mangystau Oblast has increased to 195 species in 26 families.

How to cite this paper: Esyunin S.L., Efimik V.E., Nekhaeva A.A., Kim L.V., Valuev V.A., Kabdrakhimov A.A., Tuneva T.K., Akhmedenov K.M. 2025. New data on the spider (Arachnida: Aranei) fauna of Mangystau Oblast, Kazakhstan // Arthropoda Selecta. Vol.34. No.3. P.426–446. doi: 10.15298/arthsel.34.3.15

РЕЗЮМЕ. Приведен список 84 видов пауков Мангистауской области, причем впервые отмечено семейство Dysderidae и 39 видов; пять видов впервые отмечены в Казахстане: а именно, *Argiope ahngeri* Spassky, 1932, *Uroctea grossa* Roewer, 1960, *Oxyopes badhyzicus* Mikhailov et Fet, 1986, *Evarcha nenilini*

Rakov, 1997, и *Theridion arsia* Zamani et Marusik, 2021. Обсуждается распространение всех новых для Казахстана и Мангистауской области видов. Три вида описаны как новые: *Eresus mangyshlakensis* sp.n. (♂), *Lycosa kuryk* sp.n. (♀), *Xysticus utochkini* sp.n. (♂). Установлена новая синонимия: *Minosia simeonica* Levy, 1995, syn.n. = *Minosia karakumensis* (Spassky, 1939). На основании результатов настоящего исследования и ранее опубликованных данных общее число видов пауков, зарегистрированных в Мангистауской области, возросло до 195 видов из 26 семейств.

Introduction

The first paper specifically devoted to the spider fauna of Mangystau Oblast was published more than 30 years ago [Zyuzin, Tarabaev, 1994] and contained a list of 134 species in 28 families, of which 38 species (28%) were not identified to species level. In the 21st century, the only review devoted to the region's spider fauna [Ponomarev, Abdurakhmanov, 2014] added 52 species to the earlier list. Taking into account additional records available in taxonomic papers published since the 1994 review [Ovtsharenko *et al.*, 1994; Logunov, 1995; Marusik, Logunov, 1995; Zonshtein, Marusik, 2016; Ponomarev, 2018; Logunov, Ponomarev, 2020a; Marusik, Mikhailov, 2021; Fomichev, 2022a,b], 154 valid spider species have been reported from the fauna of Mangistau Oblast prior to the beginning of this study.

The insufficient state of knowledge about the spider fauna of Mangystau Oblast becomes evident when comparing its species diversity (166 km²) with that of two neighbouring regions of Kazakhstan: West-Kazakhstan Oblast (151 km²) — 252 species, and Atyrau Oblast (119 km²) — 249 species [Ponomarev, 2022]. Both regions are slightly smaller than Mangistau Oblast, but yet far better explored. Even sharper contrast can be seen when comparing the spider diversity of Mangistau Oblast with two regional faunas adjacent from the south: viz., those of Uzbekistan (347 species; 449 km²) and Turkmenistan (421 species; 491 km²) [Mikhailov, 2024a]. Yet both of these countries are more diverse geographically and cover larger areas. In view of the above, any additional information on the Mangystau spider fauna would be valuable for understanding regional biodiversity.

In 2024, several short-term field trips to Mangystau Oblast were undertaken, which resulted in a small collection of spiders, including new and little-known species.

The aims of the present paper are: (1) to provide new data on spiders of Mangystau Oblast; (2) to describe new spider species; and (3) to discuss all new findings.

Material and methods

This paper is based primarily on the spider materials collected independently by A.A. Kabdrakhimov in April 2024, V.A. Valuev in the summer and autumn of 2024, and A.A. Nekhaeva and L. Kim in May and September of 2024. Yet, some additional material collected by A.V. Ivanov in May 2011 has also been included.

Spiders were hand-collected during day- and nighttime walks (Fig. 12A), by sweeping and pitfall traps. The particular

sites from where more than three species were collected are listed below:

1 — Saura natural boundary, nr Saura Lake, 44.23126°N 50.80369°E, 21–91 m a.s.l., under stones and from a rocky slope at night, 13.05.2024, A. Nekhaeva, 11.09.2024, A. Nekhaeva, L. Kim;

2 — Canyon Kapamsay (Kapam), 44.41061°N 51.07821°E, 42 m a.s.l., from screes and under stones and from chalk walls at night, 13–14.05.2024, A. Nekhaeva;

3 — nr underground mosque Shakpak-Ata, 44.436944°N 51.169722°E, 20 m a.s.l., 14.05.2024, A. Nekhaeva;

4 — Karatau Mts., 44.13089°N 52.33733°E, 264–436 m a.s.l., under stones, 15.05.2024, A. Nekhaeva;

5 — 35 km ENE of Senek Vil., 43.48474°N 53.80807°E, 39 m a.s.l., chalk slopes, 16.05.2024, A. Nekhaeva;

6 — Caspian Sea coast, 42.05055°N 52.44534°E, c. 26 m a.s.l., sand beach, *Atriplex* sp., *Artemisia* sp., *Atraphaxis* sp., 17–19.05.2024, A. Nekhaeva;

7 — 32 km NW of Zhanaozen, 43.51496°N 52.49956°E, 174 m a.s.l., 5.09.2024, A. Nekhaeva, L. Kim;

8 — Ustyurt plateau, Ustyurt Nature Reserve, 42.48613°N 54.46930°E, 153 m a.s.l., under stones and in plant roots, 20.05.2024, A. Nekhaeva.

9 — Ustyurt Nature Reserve, Kenderli Cordon, 42.95°N 54.68°E, 18.05.2011, A.V. Ivanov.

These sites are shown on the map (Fig. 12A) and their respective numbers are given in square brackets in the text that follows.

Some preliminary results (i.e., a list of the species collected in the spring) were published by Nekhaeva [2024] in the conference proceedings dedicated to the 40th anniversary of the Ustyurt State Nature Reserve.

Type specimens have been deposited in the collections of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZISP; curator: Dmitri V. Logunov), the Zoological Museum of the Moscow State University (ZMMU; curator: Kirill G. Mikhailov) and the Institute of Zoology Republic Kazakhstan, Almaty, Kazakhstan (IZRK; curator: Leonid V. Kim); voucher specimens have been deposited in IZRK, ZISP and Department of Invertebrate Zoology and Aquatic Ecology of the Perm State University (PSU, curator: S.L. Esyunin).

Distribution of all species new to Mangystau Oblast is discussed. Species distribution is presented and updated according to the information available in several databases and catalogues, including World Spider Catalog [WSC, 2025], Nentwig *et al.* [2025], and Mikhailov [2024b]. The nomenclature of species ranges is based on Kryzhanovskiy [2002], as interpreted by Polchaninova & Prokopenko [2015] and Sozontov & Esyunin [2022].

Stacks of colour images were manually generated using a Keyence microscope. SEM micrographs were made by means of a Hitachi TM3000 SEM microscope with BSE (back-scattered electrons) at the Perm State University, Perm, Russia and by means of a TESCAN MIRA3 LMH SEM microscope at the Joint Usage Center “Instrumental methods in ecology” A.N. Severtsov Institute of Ecology and Evolution, Moscow, Russia.

The maps (Fig. 12) were produced using the QGIS 3.40.3 software [QGIS Development Team, 2025]. Satellite images and terrain shape from Sentinel Hub web mapping service [Copernicus Sentinel data, 2025].

Collector's names are abbreviated as follows: AI — A.V. Ivanov, AK — A.A. Kabdrakhimov, AN — A.A. Nekhaeva, LK — L.V. Kim, VV — V.A. Valuev.

Abbreviations used in the text: AER — anterior row of eyes; ALE — anterior lateral eye, AME — anterior median eye, MER —

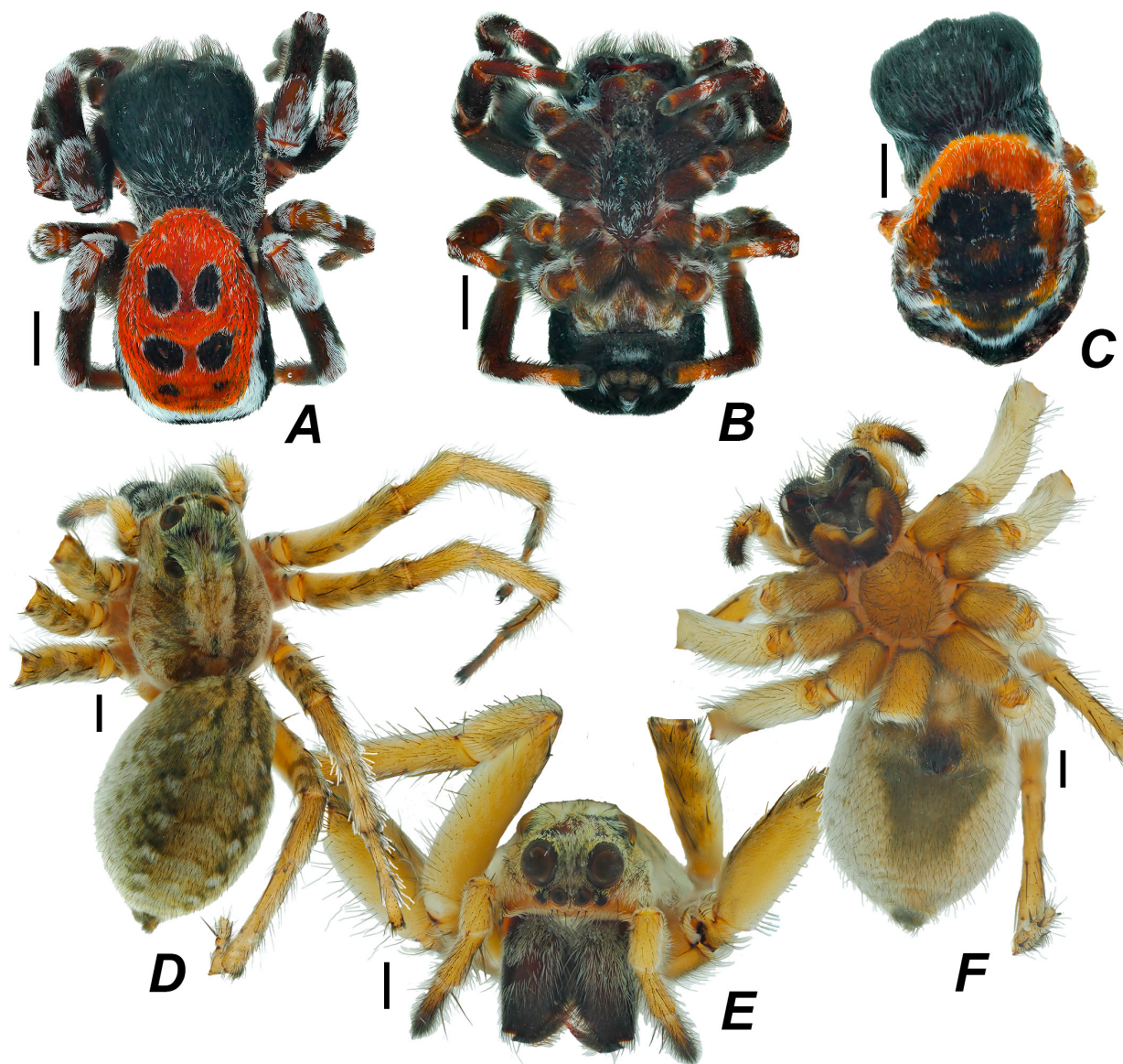


Fig. 1. Habitus of *Eresus mangyshlakensis* sp.n. (A–B), *Eresus* sp. (C) and *Lycosa kuryk* sp.n. (D–F), in dorsal (A, C, D), ventral (B, F) and frontal (E) views. Scale bars: 1.0 mm.

Рис. 1. Внешний вид *Eresus mangyshlakensis* sp.n. (A–B), *Eresus* sp. (C) и *Lycosa kuryk* sp.n. (D–F), сверху (A, C, D), снизу (B, F) и спереди (E). Масштаб: 1,0 мм.

second row of eyes (formed by PME's); MOA — median ocular area (formed by PME and PLE), MOA-L — length of MOA; MOA-WA — anterior width of MOA; MOA-WP — posterior width of MOA; PER — third row of eyes (formed by PLE's); PLE — posterior lateral eye, PME — posterior median eye; RTA — retrolateral tibial apophysis. Leg spination: a — apical, d — dorsal, pl and rl — pro- and retrolateral, v — ventral. In the following descriptions, leg podomeres are abbreviated as follows: Fm — femur, Pt — patella, Tb — tibia, Mt — metatarsus, Tr — tarsus. The sequence of leg segment measurements is as follows: total (femur + patella + tibia + metatarsus + tarsus). All measurements are in mm.

The nomenclature of male palp sclerites follows Řezáč *et al.* [2008] for *Eresus*, Ono [1988] for the thomisids and Van Keer *et al.* [2024] for the theridiids.

Taxonomy

Eresus mangyshlakensis Esyunin et Efimik **sp.n.**
Figs 1A–B, 2, 3A–D, 12B.

TYPE. Holotype ♂ (ZISP, ARA_ARA_0001730), Kazakhstan, Mangistau Oblast, Karakiya Distr., between Zhanaozen and Zhetybay Vil., 43.604778°N 52.629719°E, 19.10.2024, V.A. Valuev.

Other material. 1 ♂ (without palps and all legs; ZISP, ARA_ARA_0001734), Kazakhstan, Mangistau Oblast, Karakiya Distr., between Zhanaozen and Zhetybay Vil., 43.604778°N 52.629719°E, taken from ants, 19.10.2024, K.V. Valuev.

ETYMOLOGY. The specific epithet is an adjective originating from the Mangyshlak Peninsula where the species was found.

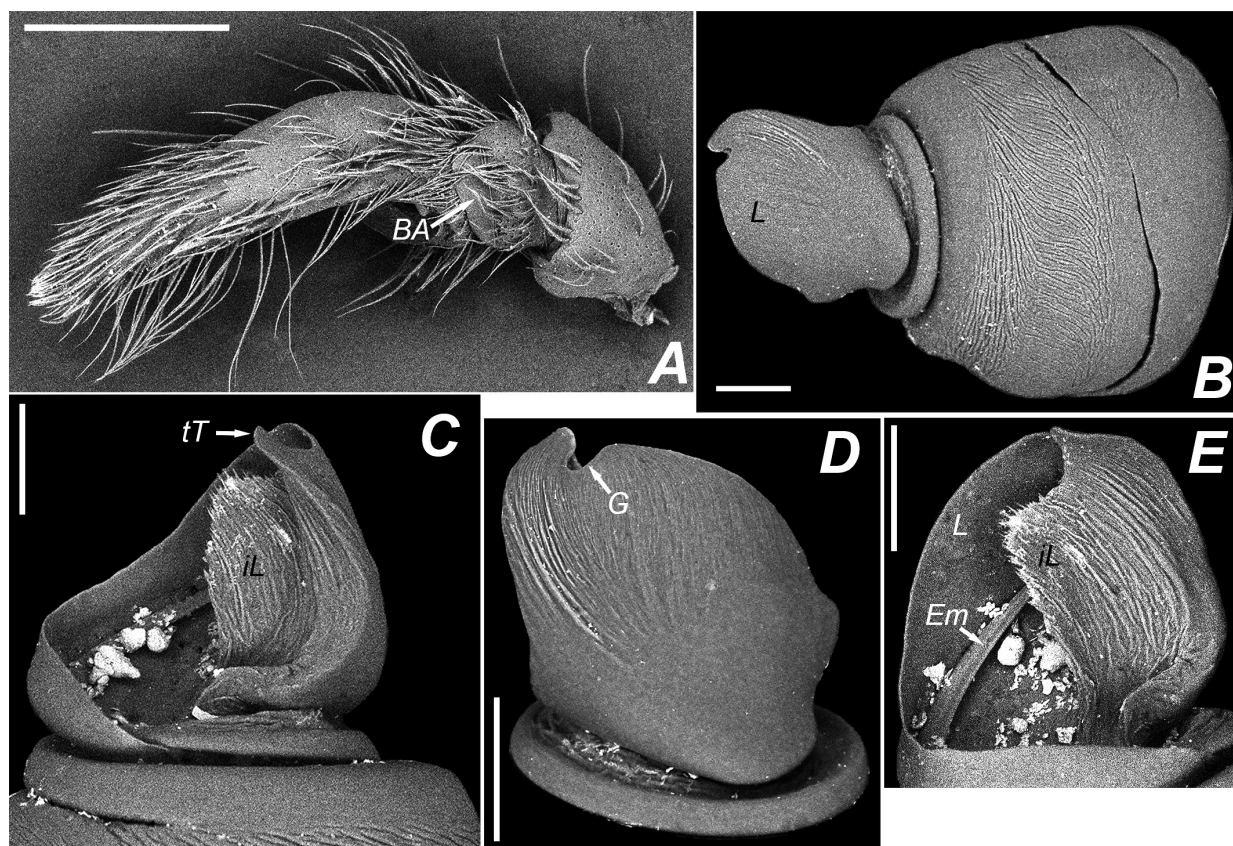


Fig. 2. Scanning electron micrographs of the male palp of *Eresus mangyshlakensis* sp.n.: A — male palp (without bulb), lateral view; B — bulb of male palp, lateral view; C, D and E — conductor, ventral, prolateral and ventro-prolateral views. Abbreviations: BA — bare area of palp tibia; Em — embolus; G — groove of conductor; iL — inner lamella of conductor; L — lamella of conductor; tT — terminal tooth of conductor. Scale bars: 0.1 mm

Рис. 2. Сканирующие электронные микрофотографии пальпы самца *Eresus mangyshlakensis* sp.n.: A — пальпа самца (без бульбуса), сбоку; B — бульбус пальпы самца, сбоку; C, D и E — кондуктор снизу, пролатерально и вентро-пролатерально. Аббревиатуры: BA — голая область голени пальпы; Em — эмболиус; G — выемка кондуктора; iL — внутренняя ламелла кондуктора; L — ламелла кондуктора; tT — терминальный зубец кондуктора. Масштаб: 0,1 мм.

DIAGNOSIS. In general body colouration, the male of *E. mangyshlakensis* sp.n. is similar to that of *E. sandaliatus* (Martini et Goeze, 1778), but can be easily distinguished from it by the white border of red dorsum and anterior black spots bordered with white hairs (vs. “usually neither the red area nor the black spots are bordered with white hairs” [Řezáč *et al.*, 2008: 277]; see also fig. 1H in [Kovács *et al.*, 2015]), and by the central sport of the white hairs on the venter (vs. “the ventral side of the opisthosoma is black” [Řezáč *et al.*, 2008: 277]).

In having the narrow, U-shaped groove of the conductor, *E. mangyshlakensis* sp.n. is similar to *E. hermanni* Kovács, Prazsák, Eichardt, Vári et Gyurkovics, 2015, but can be easily distinguished from it by the shorter spiny lamella (vs. the “spiny lamella high, about as high as terminal tooth” [Kovács *et al.*, 2015: 20, Fig. 3A]).

DESCRIPTION. MALE. Measurements. Total length 7.3. The cephalic part of carapace 2.8 long, 3.2 wide, 1.8 high; the thoracic part — 1.0 long, 2.6 wide. Abdomen 4.3 long, 3.3 wide. Chelicera length 1.8. Length of leg segments: I 8.45 (2.50 + 1.35 + 1.55 + 1.80 + 1.25); II 7.35 (2.20 + 1.25 + 1.30 + 1.50 + 1.10); III 6.30 (2.10 + 1.10 + 1.10 + 1.20 + 0.80); IV 8.75 (2.85 + 1.35 + 1.80 + 1.70 + 1.05). Colouration (Fig. 1A–B). The cephalic part black with scattered white hairs; clypeus covered with long black protruded hairs; the black thoracic part

bordered and covered with white hairs. Chelicerae black, with long black hairs. The sternum black anteriorly and dark brown posteriorly, covered with long black protruded hairs and in its posterior part with patches of white hairs. Labium black, with black hairs; endites dark brown (almost black), with yellow tips, covered with long curved black setae. Palp dark brown (almost black), with apical sports of white hairs. Legs dark brown, with dorsal sports of white hairs. Abdomen dorsally red with sparse white hairs and three pairs of black spots; the red area and the anterior spots bordered with white hairs. Laterally and ventrally abdomen is black; ventrally with central sport of the white hairs; the book-lung yellow-brown, covered with white and black hairs. Spinnerets with small tufts of white hairs. Leg spination: Fm without distinguish spines; Tb I without distinguish spines; II, III and IV v 0-0-2a; Mt I v 0-0-2a; II pl 0-0-1a, v 0-2-2a; III v 2-1-group of 7–8 setae; IV pl 0-0-1a, v longitudinal row of 7 setae and apical group of 6 setae; Tr III with 5 and IV with 8 ventral setae. Palp. Tibia with transverse bare area (without setae and hairs; BA, Fig. 2A) along the anterior margin of its retrolateral surface. Conductor broad, wrinkled (Figs 2B, D, 3D). Terminal tooth (tT) broad, somewhat longer than the lamella (L) (Figs 2C, 3A, D). Groove deep, narrow U-shaped in lateral view (Figs 2B, D, 3A). Inner, spiny lamella (iL) shorter than terminal tooth (Figs 2C, E, 3B, C).

Female unknown.

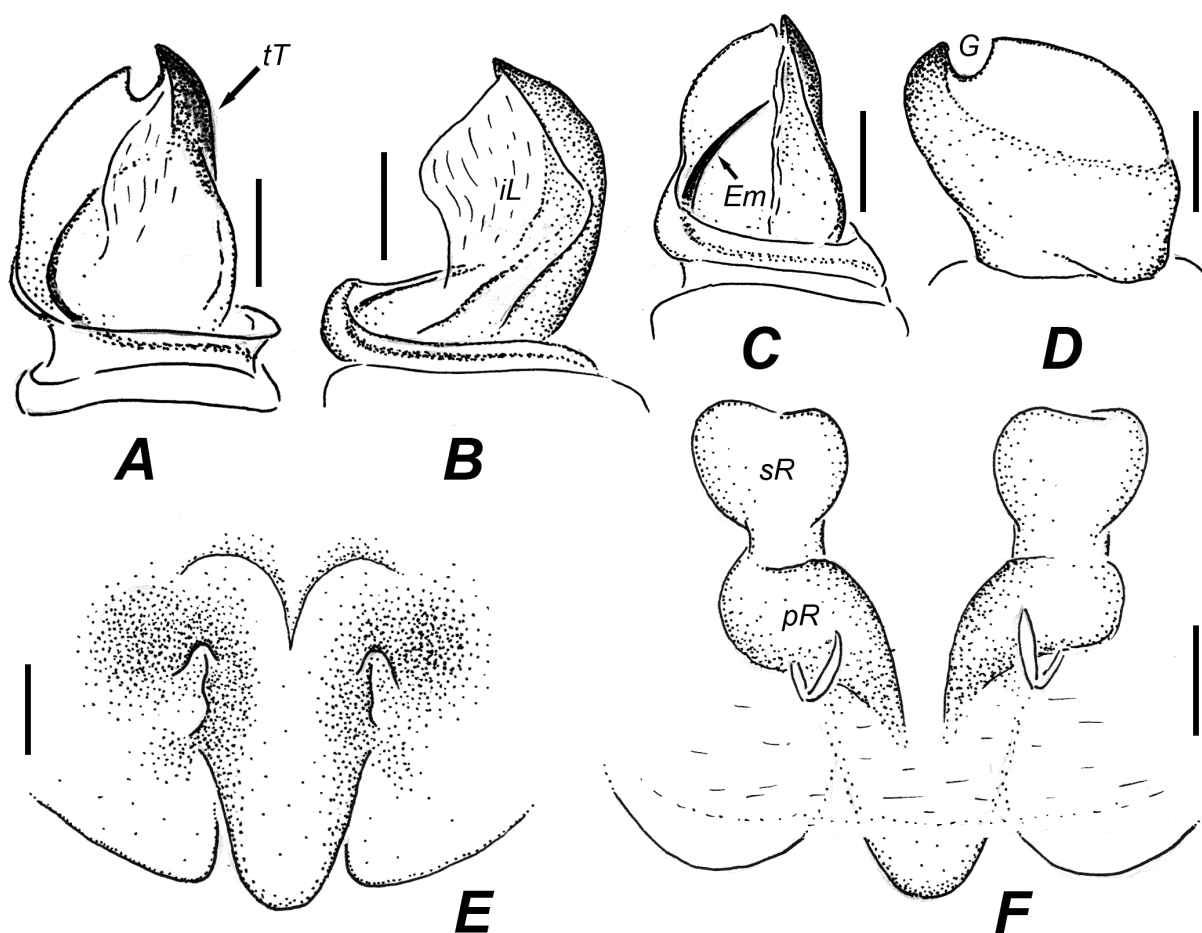


Fig. 3. Conductor of the male palp of *Eresus mangyshlakensis* sp.n. (A–D) and epigyne of *Lycosa kuryk* sp.n. (E–F): A, B, C and D — conductor ventral, ventral-prolateral, ventral-retrolateral and lateral views; E — epigyne, F — endogyne. Abbreviations: Em — embolus; G — groove of conductor; iL — inner lamella of conductor; pR — primary receptacle; sR — secondary receptacle; tT — terminal tooth of conductor. Scale bars: 0.1 mm (A–D), 0.2 mm (E–F).

Рис. 3. Кондуктор пальпы самца *Eresus mangyshlakensis* sp.n. (A–D) и эпигина *Lycosa kuryk* sp.n. (E–F): A, B, C и D — кондуктор снизу, снизу-пролатерально, снизу-ретролатерально и латерально; E — эпигина, F — эндогина. Аббревиатура: Em — эмболос; G — выемка кондуктора; iL — внутренняя ламелла кондуктора; pR — первичные рецептакулы; sR — вторичные рецептакулы; tT — терминальный зубец кондуктора. Масштаб: 0,1 мм (A–D), 0,2 мм (E–F).

REMARKS. A dead male being dragged by ants to their nest was found 5 km from the type locality of *E. mangyshlakensis* sp.n. This male is similar to that of *E. mangyshlakensis* sp.n. in the body size and the colouration of its carapace and lateral side of the abdomen, but differs in the absence of paired black spots on the dorsum. The absence of palps and legs does not allow us to confirm unequivocally that this male belongs to *E. mangyshlakensis* sp.n. Yet, it is highly likely that it is just a colour morph of *E. mangyshlakensis* sp.n.

DISTRIBUTION. Only the type locality (Fig. 12B).

Lycosa kuryk Esyunin et Efimik, **sp.n.**

Figs 1D–F, 3E–F, 5A–B, 12B.

TYPES. Holotype ♀ (ZISP, ARA_ARA_0001731), Kazakhstan, Mangistau Oblast, Karakiya Distr., near Munayshi, 43.387611°N 52.013361°E, 22.10.2024, V.A. Valuev. — Paratypes: 2 ♀♀ (ZISP, ARA_ARA_0001732), together with the holotype; 1 ♀ (ZMMU), Kazakhstan, Mangistau Oblast, Karakiya Distr., nr Zhanaozen, 43.338889°N 52.855556°E, 22–25.10.2024, V.A. Valuev; 2 ♀♀, (ZMMU), same

oblast, Karakiya Distr., nr Kyzylsay Vil. (43.451389°N 53.034167°E), 25–28.X.2024, V.A. Valuev.

ETYMOLOGY. The specific epithet a noun in apposition originating from Kuryk village, the administrative center of Karakiya District where the species was found.

DIAGNOSIS. The epigyne and vulva of *L. kuryk* sp.n. are very similar to those of the paratype *L. uzbekistanica* Logunov, 2023, but the new species differs in the wider receptacles with a narrow internal canal (vs. receptacle pear-shaped with a wide internal canal in *L. uzbekistanica*; cf. Figs 3F and 5B with figs 152 and 153 in Logunov [2023a]). Besides, both species differ as follows: (1) the venter colouration is blackened in the middle in *L. kuryk* sp.n. and monochrome yellow in *L. uzbekistanica* (cf. Fig. 1F with fig. 155 in Logunov [2023a]), and (2) the female of *L. kuryk* sp.n. is smaller than that of *L. uzbekistanica*, its carapace 6.3 mm long compared 9.0 mm in the latter species [Logunov, 2023a].

DESCRIPTION. Male unknown.

FEMALE (holotype). Measurements. Total length 13.8. Carapace 6.3 long, 4.3 wide. Eye sizes and interdistances: AME

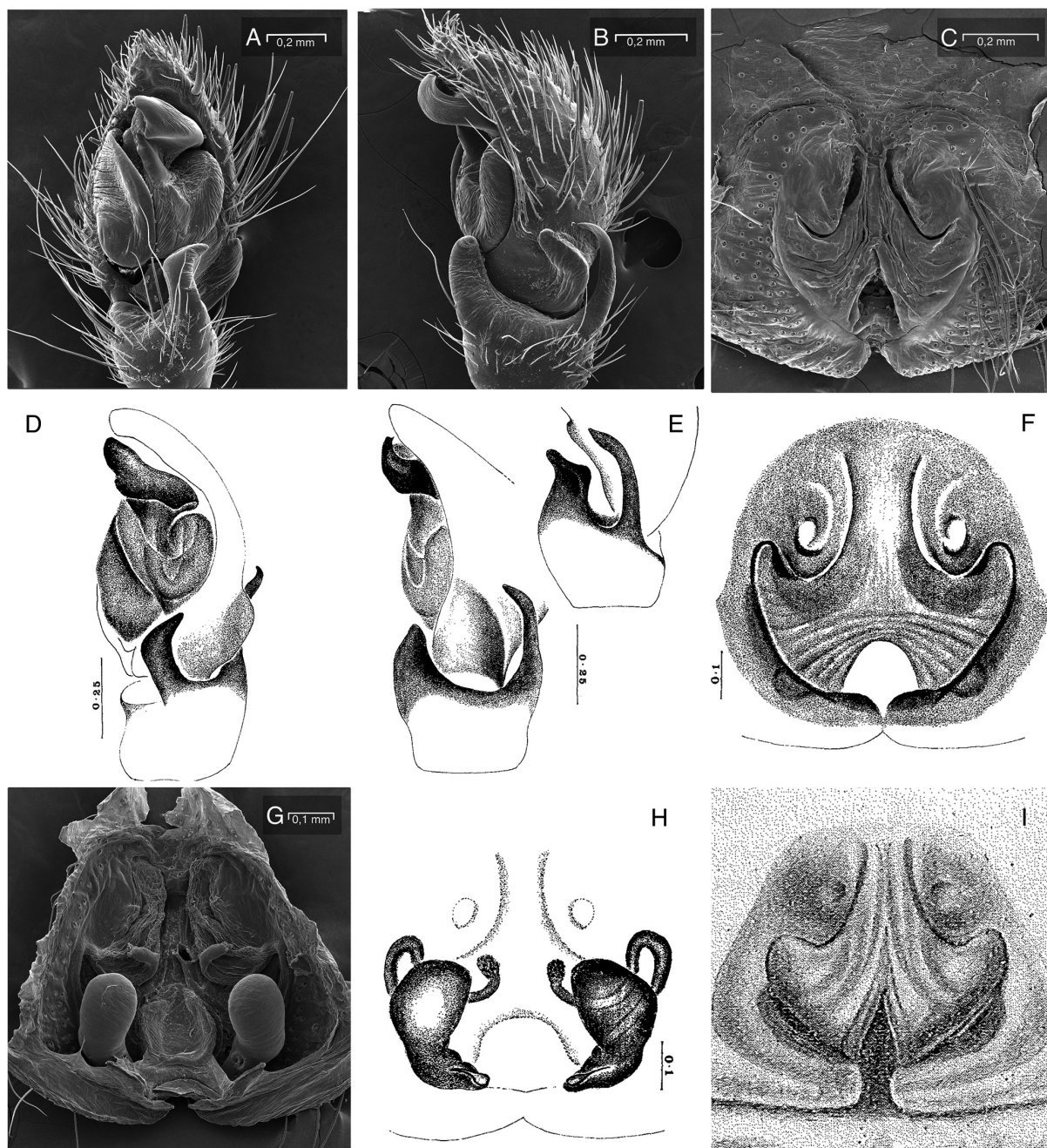


Fig. 4. Male palp (A, B, D, E) and epigyne (C, F–I) of *Minosia karakumensis* (Spassky, 1939): A, C, D, F, I — ventral view, B — retrolateral view, E — retrolateral & partly dorsal view, G–H — dorsal view (C, G after to [Nekhaeva *et al.*, 2024]; D–F, H after to [Levy, 1995]; I after to [Spassky, 1939]).

Рис. 4. Пальпа самца (A, B, D, E) и эпигина (C, F–I) *Minosia karakumensis* (Spassky, 1939): A, C, D, F, I — вентрально, B — ретролатерально, E — ретролатерально и частично дорсально, G–H — дорсально (C, G из [Nekhaeva *et al.*, 2024]; D–F, H из [Levy, 1995]; I из [Spassky, 1939]).

0.38, ALE 0.23, PME 0.90, PLE 0.75, AME-AME 0.15, AME-ALE 0.10, PME-PME 0.60, PLE-PLE 1.45. Width of AER 1.50, MER 2.10, PER 2.40. Clypeus height 0.13, chelicera length 2.55. Abdomen 7.5 long, 5.0 wide. Length of leg segments: I 15.40 (4.50 + 2.25 + 3.35 + 3.30 + 2.00); II 14.30 (3.90 + 2.20 + 3.05 + 3.20 + 1.95); III 14.00 (4.00 + 1.75 + 2.85 + 3.55 + 1.85); IV (5.30 + 2.00 + 4.00 + ?; Mt and tarsus absent). Spination of leg I: Fm d 1-1-1, pl 0-0-1, rl 0-1(small)-0; Tb pl 0-1-0, v 2-2-2ap; Mt pl 0-0-1ap, v 2-2-2ap. Colouration (Fig. 1D–F).

Carapace yellow-brown, with a wide median and two marginal stripes of white recumbent scales, and two longitudinal dark stripes of black and white recumbent scales. Sternum yellow, covered with sparse black thick hairs and setae. Labium and endites dark brown covered with black long setae and with yellowish tips. Chelicera black, covered with white setae in base and with black setae in its apical half. Abdomen: dorsum greyish, with a well-marked grey cardiac mark and a dorsal pattern of two longitudinal lines of white spots; sides dirty white;

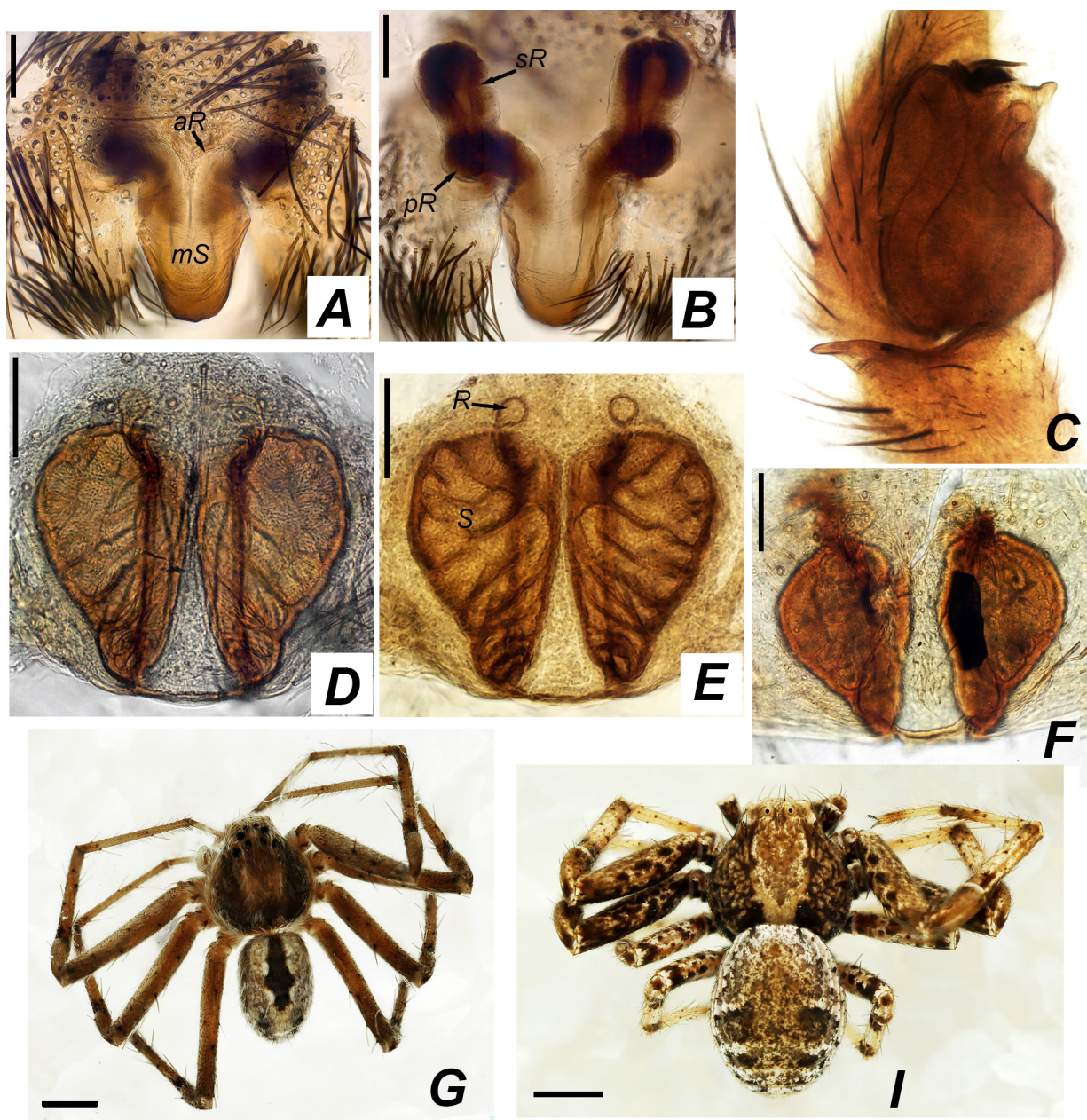


Fig. 5. Copulatory organs and habitus of *Lycosa kuryk* sp.n. (A–B, paratype), *Thanatus kitabensis* Charitonov, 1946 (C — lectotype; D–E — paralectotype, Yakkabog' Distr.; F — paralectotype, Thashkent; G — Mangistau Oblast) and *Xysticus utochkini* sp.n. (I — holotype): A, D — epigyne, B, E, F — endogyne, dorsal view; C — palp, lateral view; G, I — body, dorsal view. Abbreviations: aR — anterior rim of epigynal fovea; mS — median septum; R — receptacle; pR — primary receptacle; S — spermathecae; sR — secondary receptacle. Scale bars: 0.2 mm (A–F), 1.0 mm (G, I).

Рис. 5. Копулятивные органы и внешний вид *Lycosa kuryk* sp.n. (A–B, паратип), *Thanatus kitabensis* Charitonov, 1946 (C — лектотип; D–E — паралектотип, Якабагский р-н; F — паралектотип, Ташкент; G — Мангистауская обл.) и *Xysticus utochkini* sp.n. (I — голотип): A, D — эпигина, B, E, F — эндогина, дорсально; C — пальпа, сбоку; G, I — тело, сверху. Аббревиатура: aR — передний край ямки эпигины; mS — срединный сеπτум; R — рецептакулы; pR — первичные рецептакулы; S — сперматека; sR — вторичные рецептакулы. Масштаб: 0,2 мм (A–F), 1,0 мм (G, I).

venter blackened in the middle. Legs: coxae yellow; femur dorsal grey-yellow with grey patches and ventral white-yellow; patella and tibia yellow; metatarsus and tarsus brownish yellow. Legs covered with white recumbent hairs (especially densely on patella sides) and long black setae; tibia with apical group or transverse row of dense black hairs. Pedipalp: tibia grey-yellow dorsally and yellow ventrally; patella and tibia yellow; tarsus

brownish basally and blackened apically. Epigyne and vulva as in Figs 3E–F and 5A–B: median septum tongue-shaped; the anterior rim of epigynal fovea forms a seagull-shaped figure; primary receptacles comma-shaped and secondary receptacles broad, more or less trapezoidal.

DISTRIBUTION. Three localities in south-west Kazakhstan (Fig. 12B).

Minosia karakumensis (Spassky, 1939)
Figs 4, 12D.

Pterotricha karakumensis Spassky, 1939, 142, Fig. 5 (♀).
Minosia karakumensis: Ovtsharenko, Fet, 1980, 446 (transfer from *Pterotricha*).

Minosia simeonica Levy, 1995, 924, Figs 9–13 (♂♀). **Syn.n.**
Minosia simeonica: Sadeghi *et al.*, 2016, 6, Figs 4b, 5a–b (♀).
Minosia simeonica: Al-Khazali, 2024, 14, Figs 2A–E, 3B–C (♀).
Minosia simeonica: Nekhaeva *et al.*, 2024, 400, Fig. 6F, I (♀).
MATERIAL. KAZAKHSTAN: 2 ♂♂ (IZRK, Ara-615), Mangystau Oblast, [7], 5.09.2024, AN & LK; 1 ♀ (IZRK, Ara-251), 1 ♀ (IZRK, Ara-256), 3 ♀♀ (IZRK, Ara-257), East Kyzylkum Desert, around Kar-amola Mt., 42.233549°N 67.808945°E, 230–350 m, 13–19.10.2023, LK.

REMARKS. *Pterotricha karakumensis* was described by Spassky [1939] from the vicinity of Ashgabat (37°57'N 58°23'E) based on two females. Having studied specimens from the Badkhyz Reserve (35°42'N 61°49'E) in southeastern Turkmenistan, Ovtsharenko & Fet [1980] transferred this species to the genus *Minosia* Dalmás, 1921. Later, it was recorded for the southwest and central Kopet Dag Mt Range (38°04'N 57°22'E) and Repetek Reserve (38°35'N 63°11'E) [Mikhailov, Fet, 1994].

The species *Minosia simeonica* described from Israel [Levy, 1995] was recently reported from the Kyzylkum Desert [Nekhaeva *et al.*, 2024]. Vladimir I. Ovcharenko (New York, pers. comm.) drew our attention to the fact that it is very likely that this species name could be a junior synonym of *M. karakumensis*. A comparison of copulatory organs of the male collected from Mangystau Oblast and the females from East Kyzylkum Desert with those of *M. simeonica* from Israel (cf. Figs 4A–C, G and Figs 4D–F, H–I) has shown no differences. Hence, it is safe to conclude that *M. simeonica* Levy, 1995 syn.n. is to be considered a junior synonym of *M. karakumensis* (Spassky, 1939).

DISTRIBUTION (Fig. 12D). New to Mangystau Oblast. In Kazakhstan, it has earlier been recorded from the Kyzylkum Desert only [Nekhaeva *et al.*, 2024: sub *M. simeonica*]. Outside Kazakhstan, it has been known from Turkmenistan [Mikhailov, Fet, 1994]; Iraq [Al-Khazali, 2024: sub *M. simeonica*], Iran [Sadeghi *et al.*, 2016: sub *M. simeonica*] and Israel [Levy, 1995: sub *M. simeonica*]. The finding in Mangystau Oblast represents the northernmost limit of the species range.

Thanatus kitabensis Charitonov, 1946
Figs 5C–G, 6A–C, 7A–C.

Thanatus kitabensis Charitonov, 1946, 28, figs 48–49 (♂♀)
Thanatus kitabensis: Charitonov, 1969, 121 (♀).
Thanatus kitabensis: Lyakhov, 2000, 224, figs 33–36 (♂♀).
TYPES. Lectotype ♂ (PSU: 1 slide preparation of the palp; designated here), Uzbekistan, Qashqadaryo Oblast, 10 km N of Kitob city, 39.133333°N 66.883333°E, 21.03.1942, D.M. Fedotov; label: «*Thanatus kitabensis* n.sp. ♂ D. Charitonov 1943 Китабский р-н, Бухар[ской] обл., 9–10 км от Китаба на север к Самарканду, 21.03.1942, Д.М. Федотов».

Paralectotypes (PSU: two slide preparations of the epigynes; designated here): 1 ♀, Uzbekistan, Qashqadaryo Oblast, Yakkabog' Distr.; label: «*Thanatus kitabensis* n.sp. ♀ D. Charitonov 1943 окр[естности] колх[оза] Тюльдары, Угунск[ого] с/с, Яккабаг[ский] р-н, Бухар[ской] обл., 9.05.1942, Д.М. Федотов»; 1 ♀, Uzbekistan, nr Tashkent (41.3°N 69.283333°E); label: «*Thanatus kitabensis* n.sp. ♀ D. Charitonov 1943 окр[естности] Ишкента, Яккабаг[ский] р-н, Бухар[ской] обл., 16.04.1942, Д.М. Федотов».

MATERIAL. KAZAKHSTAN: 1 ♂, Beyneu Dist., Peski Sam, 45.264722°N 56.168611°E, *Calligonum aphyllum* association, 21–23.04.2024, AK; 1 ♀, nr sor Tuzbair, 44.03832°N 53.15471°E, 133 m a.s.l., under stones, 15.05.2024, AN.

ETYMOLOGY. The specific epithet comes from the Russian name Kitob (= Kitab) of the city from where the type series was collected.

DIAGNOSIS. In the shape of RTA, the median apophysis and the long embolus, the male of *T. kitabensis* is closest to that of *T. coloradensis* Keyserling, 1880, from which it can be distinguished by the following characters: the shorter apical thin part of embolus (cf. Figs 6A and 7A and fig. 61 in Logunov [1996]) and the longer RTA apex (similar to that of *T. ubsunurensis* Logunov, 1996; cf. Figs 6B and 7B–C and figs 60, 62–63 in Logunov [1996]), and from *T. ubsunurensis* by the long embolus (cf. Figs 6A and 7A and fig. 98 in Logunov [1996]). In the conformation of the epigyne, the female of *T. kitabensis* is extremely close to that of *T. coloradensis*, from which it can be distinguished by the pear-shaped spermathecae with receptacles shifted from the middle line of the spermatheca to the epigynal center (vs. the irregularly shaped spermathecae, with receptacles shifted laterad from its middle line in *T. coloradensis*; fig. 68 and 72 in Logunov [1996]).

COMMENTS. The poorly known philodromid species *T. kitabensis* was described and recorded from three locality in Uzbekistan. However, no holotype, and hence no type locality was designated neither in the original description [Kharitonov, 1946], nor later [Kharitonov, 1969]. Lyakhov [2000] redescribed this species based on numerous materials from Kazakhstan, Uzbekistan, Turkmenistan and Tajikistan, but did not re-examine the type series.

Recently, some syntypes of *T. kitabensis* were found in the PSU collection, which are three slide preparations of the copulatory organs (specimen bodies are missing). The male lectotype and two female paralectotypes have been designated here (see above).

The only male available has been selected as the lectotype, based on the following considerations. The original description of *T. kitabensis* contains not only a description of the female, as noted in the World Spider Catalogue [WSC, 2025], but also that of the male: viz., “♂. The cymbium is wider than in *Th. formicinus* and narrower than in *Th. alpinus* [= *T. coloradensis* Keyserling, 1880]. The palpal tibia process also differs from both species” [Kharitonov, 1946: 28]. Thus, the male was mentioned as part of the original type series and its palp was illustrated. The data label of the male allows quite accurate determination of the type locality of this species. Moreover, D.E. Kharitonov considered the male to be the type specimen, judging by the name of the species. Of all the three syntypes, only the male was collected from Kitob District, whereas the females were found in Yakkabog' District.

DESCRIPTION. The male [Lyakhov, 2000: 226], the female [Kharitonov, 1969: 121]. RTA dorsally elongated, tapering towards the apex and lateral S-shaped with strongly curved backwards tip (Figs 5C, 6B, 7B–C). Tegular apophysis big (*TA*; Fig. 7A), arising close to central curve of sperm duct (Fig. 6A). Embolus with comparatively long, thin tip and wide embolic base (*EB*; Fig. 7A). Embolic base gradually merging into tegulum. Epigyne oblong, with narrow central division and rounded lateral pockets (Figs 5D, 6C). Spermathecae pear-shaped; receptacles visible from ventral side, shifted from the middle of the spermatheca to the center of the epigyne (Fig. 5D–F).

DISTRIBUTION. A Central Ancient Mediterranean range: from Dagestan, Azerbaijan and Iran in the west to eastern Kazakhstan in the east, northwards to southern regions of Russian Plain, southward to Turkmenistan, Uzbekistan, Tajikistan [Lyakhov, 2000; Logunov, Huseynov, 2008; Zamani *et al.*, 2015; Ponomarev, 2022].

Xysticus utochkini Esysunin et Efimik, **sp.n.**
Figs 5I, 6D–E, 7D–G, 12C.

Xysticus turkmenicus (nec Marusik et Logunov, 1995): Nekhaeva *et al.*, 2024: 403, Figs 7G–I (misidentification).

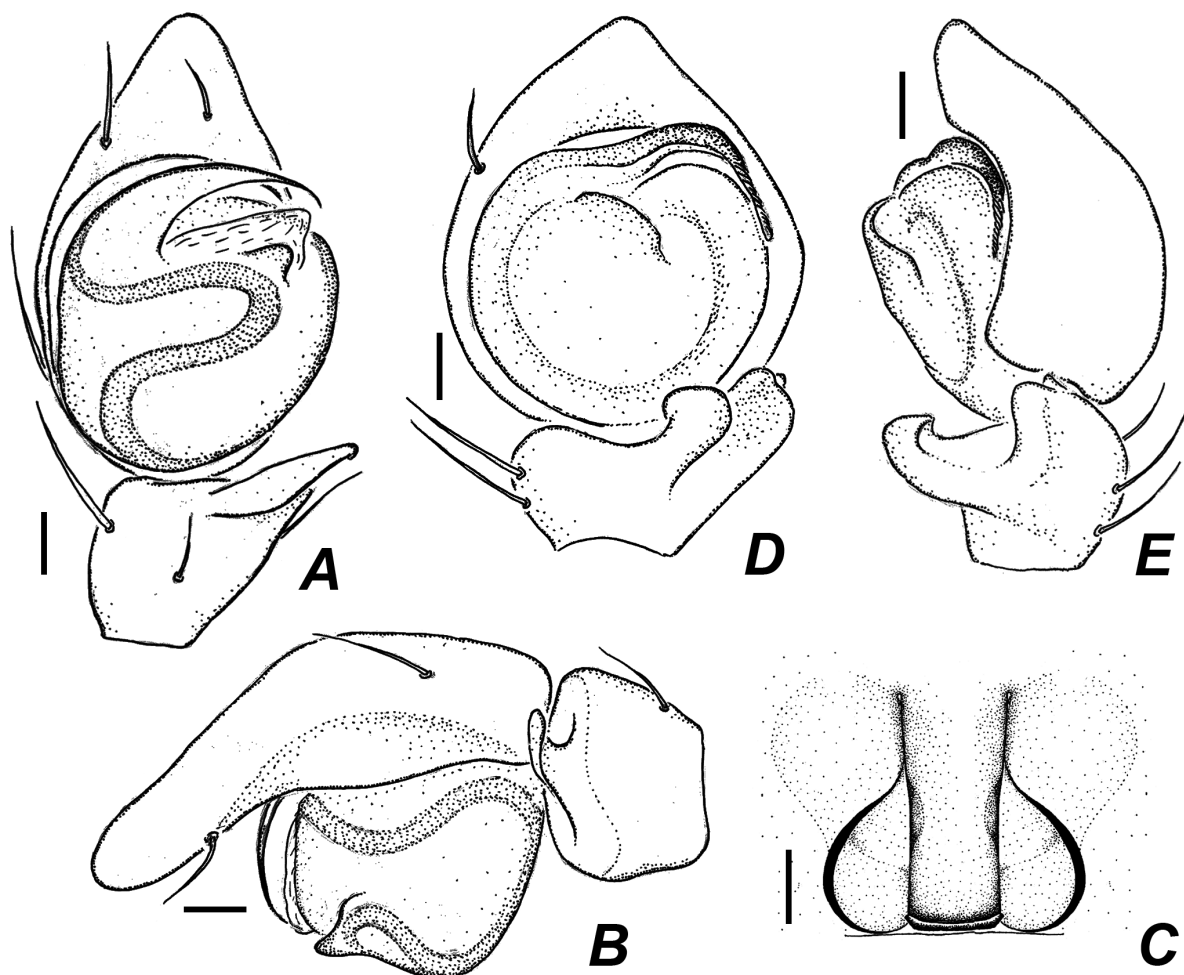


Fig. 6. *Thanatus kitabensis* Charitonov, 1946 (A–C) and *Xysticus utochkini* sp.n. (D–E): A, D — palp, ventral view; B, E — palp, lateral view; C — epigyne (after to [Lyakhov, 2000] with additions). Scale bars: 0.1 mm (A–C, D–E), 0.25 mm (C).

Рис. 6. *Thanatus kitabensis* Charitonov, 1946 (A–C) и *Xysticus utochkini* sp.n. (D–E): A, D — пальпа, снизу; B, E — пальпа, сбоку; C — эпигина (по [Lyakhov, 2000] с дополнениями). Масштаб: 0,1 мм (A–C, D–E), 0,25 мм (C).

TYPES. Holotype ♂ (ZISP, ARA_ARA_0001733), Kazakhstan, Mangistau Oblast, Karakiya Distr., nr Kyzylsay Vil., 43.451389°N 53.034167°E, 26.10–01.11.2024, V.A. Valuev. — Paratype: 1 ♂ (IZRK, Ara-264), Kazakhstan, East Kyzylkum Desert, Kazakhstan main chink, nr Karamola Mt., 42.279899°N 67.755806°E, 358 m a.s.l., 17–19.10.2023, LK.

ETYMOLOGY. The new species is dedicated to the well-known Russian arachnologist, Alexander S. Utochkin (1924–1992), who revised many thomisid groups within the scope of the USSR fauna.

DIAGNOSIS. In general appearance and the palp structure, the male of *X. utochkini* sp.n. is very similar to that of *X. turkmenicus* (Marusik et Logunov, 1995), but can be distinguished by fine details of the embolus: its thin apical part slightly shorter than the thick basal part in *X. utochkini* (vs. the thin apical part twice as short as the thick basal part in *X. turkmenicus*; cf. Fig. 7F and fig. 30 in Marusik & Logunov [1995]), and the thick basal embolic part passes relatively uniformly into the thin apical part in *X. utochkini* sp.n. (vs. sharply tapering to the thin apical part in *X. turkmenicus*; cf. Fig. 7D and fig. 30 in Marusik & Logunov [1995]).

Besides, both species differ in their body colouration and the shape of eye field: (1) carapace dark brown, with a wide median

yellow-brown stripe and white V-shaped mark in *X. utochkini* sp.n. (Fig. 5I), while it is “sandy-coloured with red-brown and cream-coloured spots” in *X. turkmenicus* [Marusik, Logunov, 1995: 149]; (2) dorsum white laterally and brownish in the middle, with numerous brown round stigmata and black spots in *X. utochkini* sp.n. (Fig. 5I), but abdomen “sandy-coloured with cream-coloured sports and bands and 2 pairs of distinct large red-brown sports” in *X. turkmenicus* [Marusik, Logunov, 1995: 149]; (3) eye field square in *X. utochkini* sp.n., but elongated trapezoid (MOA-WA 0.36, MOA-WP 0.39, MOA-L 0.41) in *X. turkmenicus* [Marusik, Logunov, 1995].

DESCRIPTION. MALE (holotype). Measurements. Total length 4.4. Carapace 2.1 long, 2.2 wide. Eye sizes and interdistances: AME 0.08, ALE 0.13, PME 0.08, PLE 0.10, AME-AME 0.30, AME-ALE 0.13, PME-PME 0.28, PME-PLE 0.33. Eye field: MOA-WA 0.43, MOA-WP 0.43, MOA-L 0.43. Clypeus height 0.15. Abdomen 2.5 long, 2.1 wide. Length of leg segments: I 8.26 (2.50 + 1.13 + 1.80 + 1.83 + 1.00); II 8.16 (2.45 + 1.08 + 1.80 + 1.83 + 1.00); III 4.89 (1.58 + 0.70 + 1.03 + 0.88 + 0.70); IV 5.21 (1.63 + 0.63 + 1.15 + 1.15 + 0.65). Spination of leg I: Fm d 1-2-1, pl 2-2-0; Tb pl 1-1-1, rl 1-1-1, v 2+2-2+2-2ap; Mt pl 1-1-1ap, rl 1-1-1ap, v 2-2-2+2ap. Colouration (Fig.

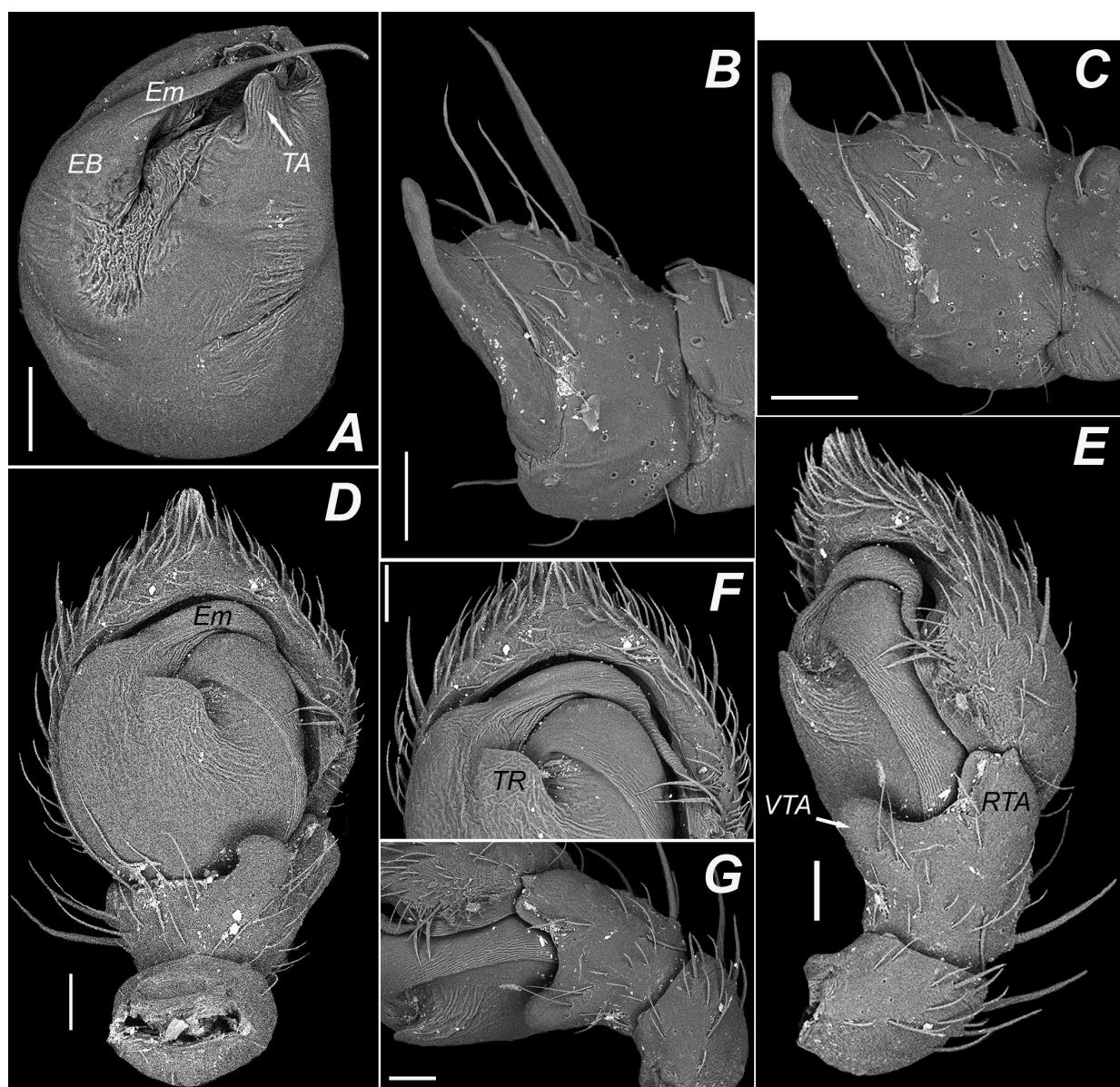


Fig. 7. Scanning electron micrographs of the male palp of *Thanatus kitabensis* Charitonov, 1946 (A–C) and *Xysticus utochkini* sp.n. (D–G): A — bulbus, anterior-ventral view; B, C, G — tibia, lateral view; D, E — palp, ventral and lateral views; F — tip of bulb, ventral view. Abbreviations: Em — embolus; EB — embolic base; RTA — retrolateral apophysis; TA — tegular apophysis; TR — tegular ridge; VTA — ventral apophysis. Scale bars: 0.1 mm

Рис. 7. Сканирующие электронные микрофотографии пальпы самца *Thanatus kitabensis* Charitonov, 1946 (A–C) и *Xysticus utochkini* sp.n. (D–G): A — бульбус, спереди-снизу; B, C, G — голень, сбоку; D, E — пальпа, снизу и сбоку; F — вершина бульбуса, снизу. Аббревиатура: Em — эмболюс; EB — основание эмболюса; RTA — ретролатеральная апофиза; TA — тегулярная апофиза; TR — складка тегулума; VTA — вентральная апофиза. Масштаб: 0,1 мм.

51). Carapace dark-brown with white spots, and wide median yellow-brown stripe with white V-shaped mark; basally with two black triangle spots. Sternum brown with rare white and dark brown spots. Chelicera bicoloured: white-black. Abdomen: dorsum white laterally and brownish in the middle, with numerous brown round stigmata and black spots; folded sides white with black spots; venter white with grayish in the middle; the book-lung white. Legs I–II: femur white prolaterally, with grey and black spots, black retrolaterally; patella grey; tibia dirty white, blackened basally and apically; metatarsus and tarsus yellowish, blackened apically. Legs III–IV: femur dorsal and prolateral white, with black spots, retrolateral grey, blackened

apically; patella white, with black spots; tibia white, blackened basally and apically; metatarsus and tarsus yellowish, blackened apically. Palp. Bulb rounded, with distinct oblique tegular ridge (TR; Figs 6D and 7 E); embolic base is in prolateral-apical position (Fig. 7D and 7F); embolus thick in basal half, tapering towards apex; thin apical embolic part with oblique notches (Fig. 7E–F). Palp tibia with two apophyses: ventral apophysis (VTA; Fig. 7E) short, with slightly curved prolateral apex; retrolateral apophysis (RTA; Fig. 7E and 7G) dorsally thick and rounded in section, passing below into a flat part; its apex uniformly rounded with a small tooth near the middle.

FEMALE unknown.

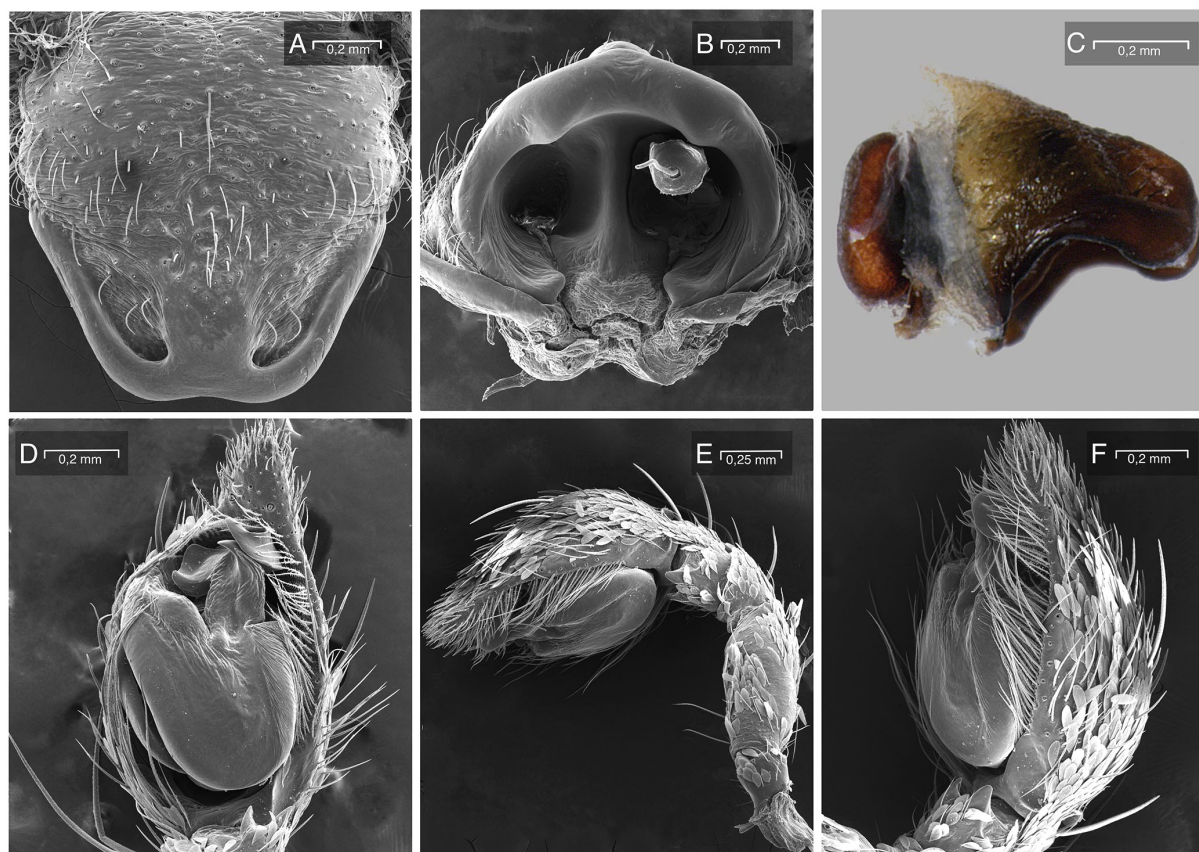


Fig. 8. Scanning electron micrographs and color photo of the epigyne of *Argiope ahngeri* Spassky, 1932 (A–C) and male palps of *Oxyopes badhyzicus* Mikhailov et Fet, 1986 (D–F): A, D — ventral view, B — posterior view (a broken embolus is visible on the right), C — lateral view, E–F — retrolateral views.

Рис. 8. Сканирующие электронные микрофотографии и цветное фото эпигины *Argiope ahngeri* Spassky, 1932 (A–C) и пальпы самца *Oxyopes badhyzicus* Mikhailov et Fet, 1986 (D–F): A, D — вентрально, B — сзади (справа виден обломанный эмболюс), C — сбоку, E–F — ретролатерально.

DISTRIBUTION. Two localities in the desert zone of Kazakhstan (Fig. 12C).

List of species

AGELENIDAE

Benoitia tadhika (Andreeva, 1976)

MATERIAL. KAZAKHSTAN (IZRK): 1 ♀ (IZRK), c. 28 km E Jetibai Vil., 43.585278°N 52.592778°E, 230 m a.s.l., 5.09.2024, AN & LK; 2 ♀♀, 30 km NNW of Zhanaozen, 43.62057°N 52.70697°E, 266 m a.s.l., under stones, 5.09.2024, AN & LK; 1 ♀, 58 km SSE of Aktau, 43.187091°N 51.509442°E, 0 m a.s.l., desert on plain, with *Aeluropus* sp., *Convolvulus* sp., *Artemisia* sp., 2.09.2024, AN & LK; 1 ♀, ca 42 km ENE of Jetibai Vil., 43.62806°N 52.63897°E, 262 m a.s.l., 5.09.2024, AN & LK; 1 ♀, 38 km WSW of Zhanaozen, 43.26229°N 52.38262°E, 124 m a.s.l., 4.09.2024, AN & LK; 5 ♀♀, 15 km NW of Uzen Vil., 43.56156°N 52.92785°E, 250 m a.s.l., under stones, 4.09.2024, AN & LK; 1 ♀, 44 km NNW of Zhanaozen, 43.70061°N 52.55862°E, 263 m a.s.l., under stones, 5.09.2024, AN & LK; 1 ♀, 10 km SSE Kuryk Vil., 43.087500°N 51.699167°E, 10 m a.s.l., *Artemisia* association, 3.09.2024, AN & LK; 2 ♀♀, 8 km SSE of Jetybai railway station, 43.38894°N 52.11198°E, 129 m a.s.l., desert with *Artemisia* spp., *Anabasis aphylla*, 4.09.2024, AN & LK; 1 ♀, 36 km WSW of Zhanaozen, 43.291094704°N 52.399537414°E, 113 m a.s.l., takyr, 3.09.2024, AN & LK.

ARANEIDAE

Aculepeira armida (Audouin, 1826)

MATERIAL. KAZAKHSTAN: 1 ♂, 3 ♀♀ (IZRK), 1 juv. [3].

Araneus grossus (C.L. Koch, 1844)

MATERIAL. KAZAKHSTAN: 1 ♂, [2].

REMARKS. New to Mangystau Oblast. The species is widespread in Kazakhstan: Kostanay, Akmola, East Kazakhstan and Almaty Oblasts [Marusik *et al.*, 1990]. West-Central Palearctic subboreal-semidesert range: from the Mediterranean to South Siberia [Šestáková *et al.*, 2009; Logunov *et al.*, 1998; Fomichev, 2015].

Argiope ahngeri Spassky, 1932

Figs 8A–C.

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 105 km ESE of Fetisovo, 42.53497°N 53.88927°E, 5 m a.s.l., 8.09.2024, AN & LK; 1 ♀ (IZRK), 77 km SSE of Fetisovo, 42.081389°N 52.807222°E, 120 m a.s.l., 7.09.2024, AN & LK; 1 ♀ (IZRK), 79 km SE of Fetisovo, 42.27978°N 53.32380°E, 133 m a.s.l., 8.09.2024, AN & LK; 2 ♀♀ (IZRK), 107 km ESE of Akkuduk Vil., 42.82928°N 55.38925°E, 213 m a.s.l., 9.09.2024, AN & LK; 1 ♂ (ZISP), S of Mangystau Oblast, 42.36–42.20°N 54.783333–54.81°E, 07.2024, VV.

REMARKS. New to Kazakhstan. Central-Asian range: the species is known from Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan [Tiunov, Esyunin, 2014].

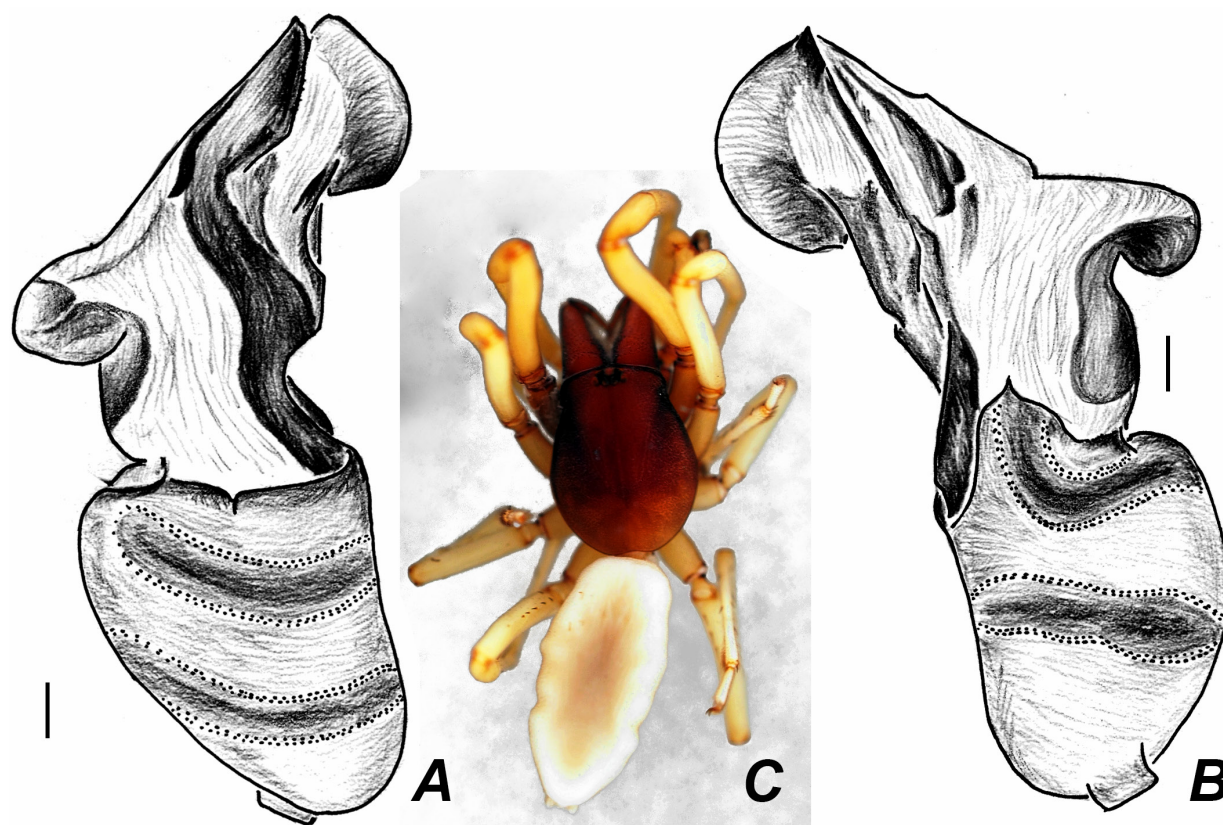


Fig. 9. Bulb of male palp (*A–B*) and habitus (*C*) of *Dysdera nenilini* Dunin, 1989: *A* — palp, prolateral view; *B* — palp, retrolateral view. Scale bars: 0.1 mm (*A–B*), 1.0 mm (*C*).

Рис. 9. Бульбус пальпы самца (*A–B*) и внешний вид (*C*) *Dysdera nenilini* Dunin, 1989: *A* — пальпа, пролатерально; *B* — пальпа, ретролатерально. Масштаб: 0,1 мм (*A–B*), 1,0 мм (*C*).

Argiope lobata (Pallas, 1772)

MATERIAL. KAZAKHSTAN: 2 ♀♀ (IZRK), 9.3 km NNW of Kuryk Vil., 43.251418°N 51.612775°E, –30 m a.s.l., desert on coastal sandy plain, with *Alhagi* sp., *Artemisia arenaria*, 2.09.2024, AN & LK; 1 ♀ (IZRK), 56 km SSE of Akkuduk Vil., 42.49344°N 54.26629°E, 129 m a.s.l., 9.09.2024, AN & LK; 1 ♀, Ustyurt Plateau, 43.351911°N 55.715808°E, 30.07.2024, VV; 1 ♀ (ZISP), Karakiya Distr., 32 km W of Bolashak Vil. (on the border with Turkmenistan), 42.310583°N 53.284492°E, 26.09.2024, VV; 1 ♀, Ustyurt Plateau, 43.361628°N 55.778178°E, 30.07.2024, K.V. Valuev.

CHEIRACANTHIIDAE

Cheiracanthium elegans Thorell, 1875

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [3].

REMARKS. New to Mangystau Oblast. In Kazakhstan, this West Central Palearctic subboreal-semidesert species has been recorded from West Kazakhstan [Ponomarev, 2022] and East Kazakhstan Oblasts [Savel'eva, 1970] only.

Cheiracanthium erraticum (Walckenaer, 1802)

MATERIAL. KAZAKHSTAN: 2 ♂♂ (IZRK), [5].

REMARKS. New to Mangystau Oblast. In Kazakhstan, this trans-Palaearctic temperate species has been recorded from West Kazakhstan (Atyrau) [Ponomarev, 2022] and East Kazakhstan Oblasts [Savel'eva, 1970] only.

Cheiracanthium gratum Kulczyński, 1897

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [1].

Cheiracanthium punctorium (Villers, 1789)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [2].

REMARKS. New to Mangystau Oblast. In Kazakhstan, this West Central Palearctic subboreal range species has been recorded from Kostanay [Ponomarev *et al.*, 2017], East Kazakhstan [Savel'eva, 1970] and Almaty Oblasts [Spassky, Shnitnikov, 1937].

DICTYNIDAE

Devade tenella (Tystshenko, 1965)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [6].

DYSDERIDAE

Dysdera nenilini Dunin, 1989

Fig. 9.

MATERIAL. KAZAKHSTAN: 1 ♂ (PSU-6354), [9].

REMARKS. This family and species have been recorded from Mangystau Oblast for the first time. *Dysdera nenilini* was described from the three localities in the north-western part of Dashogus Velayat of Turkmenistan, on the border with Aktobe Oblast of Kazakhstan [Dunin, 1989] and later was been reported from Kazakhstan but without an exact locality [Logunov, Gromov, 2012].

ERESIDAE

Stegodyphus lineatus (Latreille, 1817)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), nr sor Tuzbair, 44.04832°N 53.16801°E, 90 m a.s.l, under stones, 15.05.2024, AN; 1

juv. (IZRK), [2]; 1 juv. (IZRK), 8.5 km WNW Kuryk Vil., 43.215833°N 51.570000°E, –20 m a.s.l., desert on sandy plain, with *Euphorbia* sp., *Artemisia* spp., 2.09.2024, AN & LK; 2 ♂♂ (PSU-6352), [9].

GNAPHOSIDAE

Anagraphis pallens Simon, 1893

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), 17.4 km NE of Fetisovo, 42.84652°N 52.81830°E, –41 m a.s.l., 6–7.09.2024, AN & LK; 2 ♂♂ (IZRK), [7].

REMARKS. New to Mangystau Oblast. In Kazakhstan, it has been earlier recorded only from Atyrau Oblast [Ponomarev, 2022]. West Central Ancient Mediterranean range: from the Mediterranean to Middle Asia [Khasaeva, Huseynov, 2017].

Berlandina caspica Ponomarev, 1979

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [2].

Berlandina spasskyi Ponomarev, 1979

MATERIAL. KAZAKHSTAN: 1 ♂ 1 ♀ (IZRK), Beyneu District, Peski Sam, 45.25°N, 56.17°E, *Calligonum aphyllum* association, 21–23.04.24, AK.

Civizelotes caucasicus (L. Koch, 1866)

MATERIAL. KAZAKHSTAN: 1 ♂ (PSU-6349), Mangystau Oblast, ~75 km NE of Zhanaozen, 43.33333°N 52.8500°E, Sentirkum sands, 27.05.2011, AI.

Drassodes lapidosus (Walckenaer, 1802)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), Tyub-Karagan Peninsula, nr underground mosque Sultan-Epe, 44.471667°N 51.010278°E, 150 m a.s.l., among stones, 13.05.2024, AN.

REMARKS. New to Mangystau Oblast. In Kazakhstan, this species has been recorded from Atyrau, West-Kazakhstan [Ponomarev, 2022], East Kazakhstan [Savel'eva, 1970], Almaty and Taldy-Kurgan Oblasts [Spassky, Shnitnikov, 1937]. West Central Palaearctic polyzonal range: North Africa, Europe, Asia Minor, the Caucasus, Kazakhstan [Kovbluk *et al.*, 2016].

Drassodes lutescens (C.L. Koch, 1839)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), 44.25180°N 52.13992°E, 118 m a.s.l., slope, scree, with Gramineae and Alliaceae, 14.05.2024, AN.

Fedotovia uzbekistanica Charitonov, 1946

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [8]; 1 ♂ (IZRK), [5]; 2 ♀♀ (IZRK), nr sor Tuzbair, 44.04832°N 53.16801°E, 90–130 m a.s.l., under stones and in soil, 15.05.2024, AN.

Gnaphosa fagei Schenkel, 1963

MATERIAL. KAZAKHSTAN: 1 ♂ (PSU-6348), Mangystau Oblast, ~75 km NE Zhanaozen, 43.33°N 52.85°E, Sentirkum sands, 27.05.2011, AI.

REMARKS. New to Mangystau Oblast. This species was originally described from Gansu, China [Ovtsharenko *et al.*, 1992], but is widespread in Kazakhstan: Atyrau [Ponomarev, 2022], Kostanay [Ponomarev, Bragina, 2014], Jambyl and Kzyl-Orda Oblasts [Ovtsharenko *et al.*, 1992].

Gnaphosa saurica Ovtsharenko, Platnick et Song, 1992

MATERIAL. KAZAKHSTAN: 1 ♂ (PSU-6367), [9].

REMARKS. New to Mangystau Oblast. This East European-South Siberian steppe (from Ukraine to South Siberia and Novosibirsk Oblast) species is widespread in northern Kazakhstan: West Kazakhstan [Ponomarev, 2022], Kostanay

[Ponomarev, Bragina, 2014], Akmolá [Trilikauskas, Lyubechanskii, 2020], Abai and East Kazakhstan Oblasts [Ovtsharenko *et al.*, 1992].

Gnaphosa steppica Ovtsharenko, Platnick et Song, 1992

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), Tyub-Karagan Peninsula, nr underground mosque Sultan-Epe, 44.471667°N, 51.010278°E, 150 m a.s.l., among stones, 13.05.2024, AN.

Micaria rossica Thorell, 1875

MATERIAL. KAZAKHSTAN: 1 ♂ 1 ♀ (IZRK), [6].

Nomisia aussereri (L. Koch, 1872)

MATERIAL. KAZAKHSTAN: 2 ♀♀ (IZRK), 30 km NNW of Zhanaozen, 43.62057°N 52.70697°E, 266 m a.s.l., under stones, 5.09.2024, AN & LK; 2 ♀♀, 1 juv. (IZRK), 38 km WSW of Zhanaozen, 43.26229°N 52.38262°E, 124 m a.s.l., 4.09.2024, AN & LK; 1 ♀ (IZRK), 15 km NW of Uzen Vil., 43.56156°N 52.92785°E, 250 m a.s.l., under stones, 4.09.2024, AN & LK; 2 ♀♀ (IZRK), 13.4 km NNE of Uzen Vil., 43.56437°N 52.93178°E, 228 m a.s.l., taky, 4.09.2024, AN & LK; 1 ♀ (ZISP), nr Zhanaozen, 43.338889°N 52.855556°E, 16–20.10.2024, VV.

REMARKS. New to Mangystau Oblast. This species is widespread in Kazakhstan: West Kazakhstan, Akmolá [Ovtsharenko, 1982], Atyrau [Ponomarev, 2022], Kocstanay [Ponomarev, Bragina, 2014], East Kazakhstan [Savel'eva, 1970], Almaty, Jambyl (=Zhambyl) [Spassky, Shnitnikov, 1937] and Turkestan Oblasts [Gromov, 2013]. West Central Ancient Mediterranean range: from the Mediterranean to China [WSC, 2025].

Nomisia conigera (Spassky, 1941)

MATERIAL. KAZAKHSTAN: 3 ♀♀ (IZRK), [6]; 1 ♀ (IZRK), [4]; 1 ♀ (IZRK), [2].

Nomisia negebensis Levy, 1995

Fig. 10A–B.

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), 38 km WSW of Zhanaozen, 43.26229°N 52.38262°E, 124 m a.s.l., 4.09.2024, AN & LK; 1 ♂ 3 ♀♀ (IZRK), [7]; 1 ♀, 8 km N of Kuryk Vil., 43.249722°N 51.671111°E, 10 m a.s.l., desert, with *Salsola* spp., *Artemisia* spp., 2.09.2024, AN & LK; 1 ♀ (IZRK), 44 km NNW of Zhanaozen, 43.70061°N 52.55862°E, 263 m a.s.l., under stones, 5.09.2024, AN & LK.

REMARKS. New to Mangystau Oblast. In Kazakhstan, it has been earlier recorded only from the Kyzylkum Desert [Nekhaeva *et al.*, 2024]. Outside Kazakhstan, it has been recorded from Israel, Turkey and Iran [WSC, 2025]. The finding in Mangystau Oblast lies at the northernmost limit of the species range.

Sosticus loricatus (L. Koch, 1866)

Fig. 10C–D.

Gnaphosa sp.: Nekhaeva, 2024, 238.

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), 42.881960°N, 53.899130°E, desert, under stones, 21.05.2024, AN.

REMARKS. The record of *Gnaphosa* sp. from Mangystau Oblast [Nekhaeva, 2024] actually refers to the circum-Holarctic species *S. loricatus*.

Synaphosus palearcticus Ovtsharenko, Levy et Platnick, 1994

Sidydrassus sp.: Nekhaeva, 2024, 238.

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), Caspian Sea coast, 43.081111°N, 51.696111°E, –30 m a.s.l., sandy beach, with *Artemisia arenaria*, 2.09.2024, AN & LK.

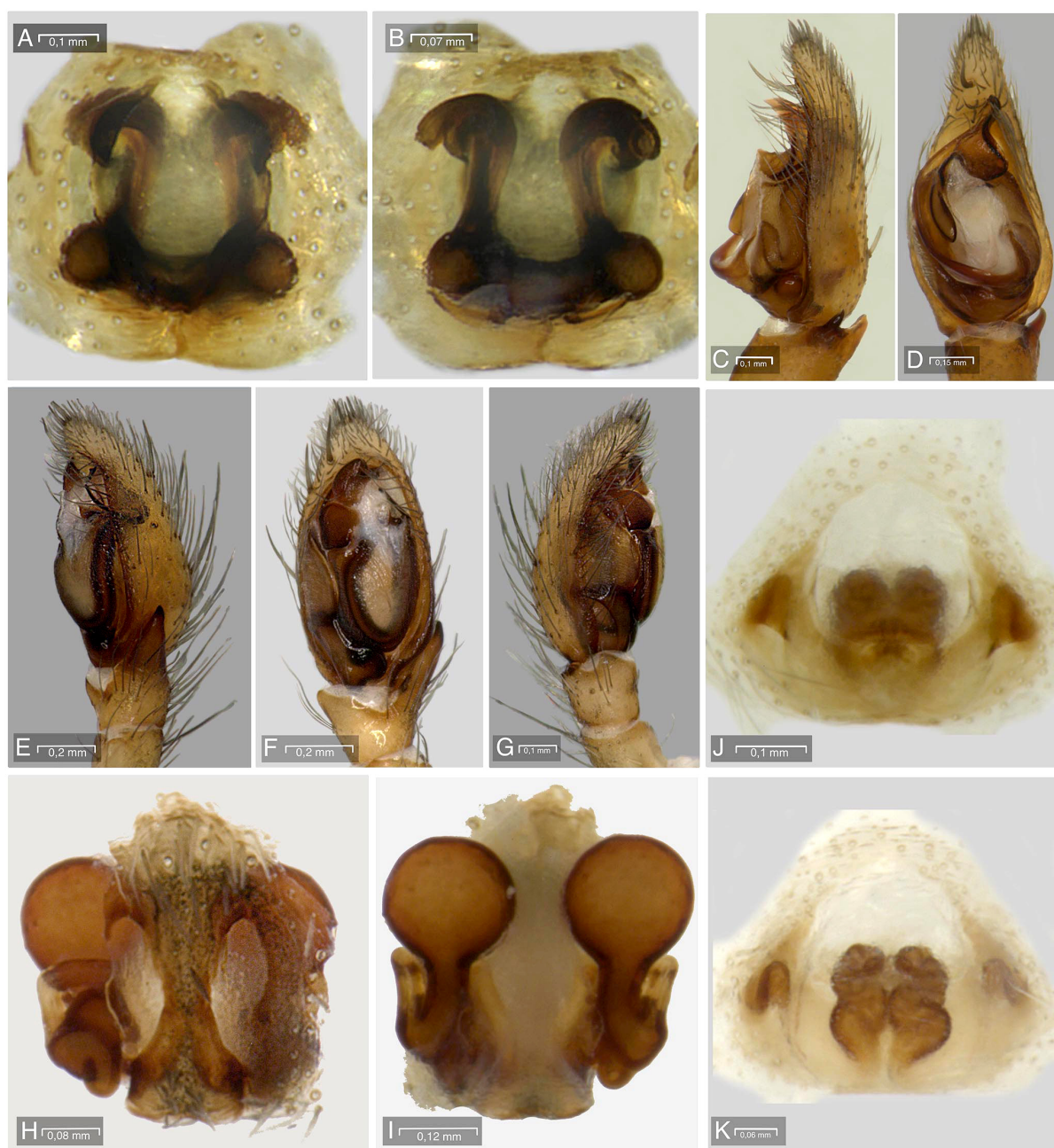


Fig. 10. Epigynes of *Nomisia negebensis* (A, B), *Evippa kazachstanica* (H, I) and *Evarcha nenilini* (J, K) and male palp of *Sosticus loricatus* (C, D) and *Zelotes anatolyi* (E–G): A, D, F, H, J — ventral view, B, I, K — dorsal view, C, E — retrolateral view, G — prolateral view.

Рис. 10. Эпигины *Nomisia negebensis* (A, B), *Evippa kazachstanica* (H, I) и *Evarcha nenilini* (J, K) и пальпы самцов *Sosticus loricatus* (C, D) и *Zelotes anatolyi* (E–G): A, D, F, H, J — вентрально, B, I, K — дорсально, C, E — ретролатерально, G — пролатерально.

REMARKS. The record of *Sidydrassus* sp. from Mangystau Oblast [Nekhaeva, 2024] actually refers to the West Central Ancient Mediterranean species *S. palearcticus*.

Zelotes anatolyi Fomichev et Marusik, 2021

Fig. 10E–F.

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [8].

REMARKS. New to Mangystau Oblast. *Zelotes anatolyi* was recently described from south-eastern Tajikistan [Fomichev,

Marusik, 2021]. In Kazakhstan, it has been only found in the Kyzylkum Desert [Nekhaeva *et al.*, 2024]. The finding in Mangystau Oblast lies at the northernmost limit of the species range.

HERSILIIDAE

Ovtsharenkoia pallida (Kroneberg, 1875)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 44.32742°N, 51.52585°E, 132 m a.s.l., in house, 14.V.2024, AN.

REMARKS. New to Mangystau Oblast. Central Asian (?) petrophilous range: Zhambyl Oblast of Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, southern Turkmenistan, Uzbekistan, where it inhabits cliffs and walls [Marusik, Fet, 2009]. The record in Mangystau Oblast represents the northernmost and westernmost limits of the species range.

LINYPHIIDAE

Acartauchenius scurrilis (O. Pickard-Cambridge, 1873)
MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [2].

Agyneta fuscipalpis (C.L. Koch, 1836)
MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [8].

REMARKS. New to Mangystau Oblast. West Central Palearctic subboreal-semidesert range: from Europe and North Africa to South Siberia and Xinjiang Province of China [Tanasevitch, 2010]. In Kazakhstan, it has been earlier recorded from East Kazakhstan [Eskov, Marusik, 1995] and Chimkent Oblasts [Gromov, 2013], and the East Kyzylkum Desert [Nekhaeva *et al.*, 2024].

Gnathonarium dentatum (Wider, 1834)
MATERIAL. KAZAKHSTAN: 2 ♀♀ (IZRK), [1], 11.09.2024.

REMARKS. New to Mangystau Oblast. In Kazakhstan, this trans-Palearctic polyzonal species has been earlier found only in Atyrau Oblast [Ponomarev, 2022].

Ipa pepticus (Tanasevitch, 1988)
MATERIAL. KAZAKHSTAN: 1 ♂ (ZISP), Beyneu District, Peski Sam, 45.25°N, 56.16°E, *Calligonum aphyllum* association, 21–23.04.24, AK.

REMARKS. Previously known from Mongolia [Tanasevitch, 1988], Turkmenistan, Russia (Tuva) and Kazakhstan (Jetisu Oblast) [Saaristo, 2007]. New to Mangystau Oblast, with the current record representing the north-westernmost limit of the species range.

Prinerigone vagans (Audouin, 1826)
MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [1], 11.09.2024.
REMARKS. New to Mangystau Oblast. In Kazakhstan, it has been earlier recorded from West Kazakhstan and Atyrau Oblasts [Ponomarev, 2022]. West Central Palearctic subboreal-subtropical range with a tendency towards subtropical cosmopolitan distribution (e.g., see Tanasevitch [2009]).

LYCOSIDAE

Arctosa ravidia Ponomarev, 2007
MATERIAL. KAZAKHSTAN: 20 ♂♂ 6 ♀♀ 4 juv. (IZRK), Caspian Sea coast, 44.223528°N 50.804194°E, sandy beach, at night with a head-torch, 10.09.2024, AN & LK.

Evippa kazachstanica Ponomarev, 2007
Fig. 10H–I.

Evippa kazachstanica Ponomarev, 2007: 94, fig. 32 (♀).
MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [4].

REMARKS. The female of *E. kazachstanica* is closely related to that of the Azeri species *E. caucasica* Marusik, Guseinov et Koponen, 2003, from which it can be distinguished by the following characters: the rectangular shape of the median plate of the epigyne, the almost parallel epigynal wings, and the length of receptaculum stem that exceeds half of its diameter (Fig. 10I). In *E. caucasica*, the median plate is triangular, epigynal wings are rounded, and the length of receptaculum stem does

not exceed half of its diameter (see figs 7, 9, 10 in Azarkina & Nuruyeva [2021]).

DISTRIBUTION. New to Mangystau Oblast. *Evippa kazachstanica* was described from neighbouring Atyrau Oblast [Ponomarev, 2007], and later found in Kostanay Oblast [Ponomarev, Bragina, 2014]. This is the third record of the species that seems to have the Kazakhstan semidesert range.

Evippa sjostedti Schenkel, 1936
MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [2].

Evippa turkmenica Sternbergs, 1979
MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), Tyub-Karagan Peninsula, Dzhigalgan Cape, 44.61294°N 50.83280°E, 43 m a.s.l., canyon, among stones, 13.05.2024, AN; 1 ♀ (IZRK), [2].

Karakumosa shmatkoi Logunov et Ponomarev, 2020
MATERIAL. KAZAKHSTAN: 12 ♂♂ 1 ♀ (IZRK), Ustyurt plateau, Ustyurt Nature Reserve, 42.69062°N 54.11923°E, 41 m a.s.l., lowland with sedge, at night with a head-torch, 20.05.2024, AN.

Lycosa praegrandis C.L. Koch, 1836
MATERIAL. KAZAKHSTAN: 1 ♂ 1 ♀ (IZRK), area in the south part of Mangystau Oblast with coordinates from 42.08° to 42.41°N and from 54.43° to 55.26°E, 27–29.07.2024, VV.

Lycosa singoriensis (Laxmann, 1770)
MATERIAL. KAZAKHSTAN: 2 ♂♂ (IZRK), Caspian Sea coast, 43.081111°N 51.696111°E, –30 m a.s.l., sandy beach, with *Artemisia arenaria*, 2.09.2024, AN & LK; 1 ♀ (IZRK), [1], 11.09.2024.

Oculicosa supermirabilis Zyuzin, 1993
MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [5]; 1 ♂ (PSU-6369), [9]; 1 ♂ (IZRK), south of Mangystau Oblast, 42.148614°N 55.109578°E, 28.07.2024, VV; 1 ♂ (IZRK), same region, 42.218303°N 54.693161°E, 28.07.2024, VV.

Pardosa jaikensis Ponomarev, 2007
MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [1], 11.09.2024.
REMARKS. New to Mangystau Oblast. In Kazakhstan, this species has been recorded from West Kazakhstan, Atyrau [Ponomarev, 2022], Kostanay [Ponomarev, Bragina, 2014] and East Kazakhstan Oblasts [Esyunin *et al.*, 2024]. Outside Kazakhstan, it is known from the south part of Russian Plain, northern Iran [Zamani *et al.*, 2022] and South Siberia [Fomichev, 2022c].

OECOBIIDAE

Oecobius nadiae (Spassky, 1936)
MATERIAL. KAZAKHSTAN: 2 ♂♂ (IZRK), [1], 12–13.V.2024.

Turanobius ferdowsii (Mirshamsi, Zamani et Marusik, 2017)
MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), 44.25180°N 52.13992°E, 118 m a.s.l., slope, scree, with Gramineae and Alliaceae, 14.05.2024, AN; 1 ♂, [5].

Uroctea grossa Roewer, 1960
MATERIAL. KAZAKHSTAN: 1 ♀ (PSU-6350), Mangystau Oblast, ~75 km NE of Zhanaozen (43.33°N 52.85°E), Sentirkum sands, 27.05.2011, AI.

REMARKS. According to Zamani & Bosselaers [2020: 45], “*Uroctea grossa* is closest to *U. thaleri* Rheims, Santos et van Harten, 2007, but differs from [it and] other species of *Uroctea* by its larger size, its broad, its short and stout blind ending duct”. Yet, we have also noticed that *U. grossa* is mark-

edly larger than *U. limbata*: its carapace 4.2 mm long [Zamani, Bosselaers, 2020], compared to 2.2–2.8 mm long in *U. limbata* [Nentwig et al., 2025].

New to Kazakhstan. Based on the latest reviews, *U. grossa* is distributed in south-western Tajikistan [Fomichev, Marusik, 2020], southern Afghanistan, north-eastern Iran and Turkmenistan [Zamani, Bosselaers, 2020]. Our data indirectly confirm Fomichev and Marusik's opinion [2020b: 237] that “the record of *U. limbata* (C.L. Koch, 1843) from the Kyzylkum Desert [Logunov, Gromov, 2012: 43] may refer to *U. grossa*”. It is very likely that the record by Zyuzin & Tarabaev [1993: 399, as *Uroctea ?limbata*] from south-western Ustyurt should also be assigned to *U. grossa*.

OXYOPIDAE

Oxyopes badhyzicus Mikhailov et Fet, 1986

Fig. 8D–F.

MATERIAL. KAZAKHSTAN: 2 ♂♂ (IZRK), Ustyurt plateau, Ustyurt Nature Reserve, 42.69062°N 54.11923°E, 41 m a.s.l., lowland with sedge, 20.05.2024, AN.

REMARKS. This species was originally described from Turkmenistan [Mikhailov, Fet, 1986], and later reported from Israel [Levy, 1999], Iran [Zamani et al., 2014] and Georgia [Seropian et al., 2024]. New to Kazakhstan, with the current record representing the north-easternmost limit of the species range.

Oxyopes heterophthalmus (Latreille, 1804)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [2].

REMARKS. New to Mangystau Oblast. This West Central Palaearctic subboreal species [Esyunin, Tuneva, 2009] is widespread in Kazakhstan: West Kazakhstan, Atyrau [Ponomarev, 2022], Kostanay [Ponomarev et al., 2017], Akmola [Esyunin, Tuneva, 2009], Almaty, Taldy-Kurgan [Spassky, Shnitnikov, 1937] and East Kazakhstan Oblasts [Savel'eva, 1970].

PHILODROMIDAE

Thanatus saraevi Ponomarev, 2007

MATERIAL. KAZAKHSTAN: 2 ♂♂ 2 ♀♀ (IZRK), 42.881960°N 53.899130°E, desert, 21.05.2024, AN; 1 ♀ (IZRK), 44.32742°N 51.52585°E, 132 m a.s.l., desert with *Artemisia*, 14.05.2024, AN; 1 ♂ (IZRK), [8]; 2 ♀♀ (IZRK), [1], 13.05.2024; 1 ♀ (IZRK), 44.36058°N, 54.03430°E, 99 m a.s.l., desert with *Salsola* spp., under stones, 16.05.2024, AN.

Thanatus vulgaris Simon, 1870

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [3].

PRODIDOMIDAE

Prodidomus redikorzevi Spassky, 1940

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [8]; 1 ♀, Ustyurt plateau, Ustyurt Nature Reserve, 42.590278°N 54.301111°E, 150 m a.s.l., desert, under stones, 20.05.2024, AN.

SALTICIDAE

Aelurillus concolor Kulczyński, 1901

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), Ustyurt plateau, Ustyurt Nature Reserve, 42.495278°N 54.388611°E, 160 m a.s.l., desert, 20.05.2024, AN; 1 ♂ (IZRK), nr Aktau, 43.834220°N 51.058050°E, desert with *Artemisia* sp., 12.05.2024, AN; 1 ♂ (IZRK), [1], 11.09.2024.

Aelurillus lutosus (Tystshenko, 1965)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), Torysh Vil., 44.32254°N 51.59764°E, 143 m a.s.l., 14.05.2024, AN.

REMARKS. New to Mangystau Oblast. *Aelurillus lutosus* is widespread in Kazakhstan: West Kazakhstan, Kostanay, Pavlodar and Kyzyl-Orda Oblasts [Logunov, Marusik, 2000; Azarkina, 2003], and is also known from Dagestan [Ponomarev, 2022] and northern Kyrgyzstan [Logunov, Marusik, 2000].

Bianor albobimaculatus (Lucas, 1846)

MATERIAL. KAZAKHSTAN: 1 ♂ 1 ♀ (IZRK), [1], 11.09.2024.

REMARKS. New to Mangystau Oblast. This West Central Ancient Mediterranean species “known from South Africa to the Mediterranean, north-eastward to Central Asia” [Logunov, 2023b: 739]; in Kazakhstan, it has been earlier reported only from Chimkent Oblast [Gromov, 2013].

Chalcoscirtus parvulus Marusik, 1991

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [3].

REMARKS. New to Mangystau Oblast. In Kazakhstan, this species has been recorded from Atyrau [Ponomarev, 2022], Almaty, Turkestan, Jambyl Oblasts [Logunov, Marusik, 1999]. Eastern Mediterranean-Central Ancient Mediterranean Range: known from Greece throughout Asia Minor to Tajikistan [Logunov, 2015].

Chalcoscirtus tanasevichi Marusik, 1991

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [2].

REMARKS. New to Mangystau Oblast. In Kazakhstan, this species was known from the eastern regions: Pavlodar, Almaty, Jambyl, Chimkent [Logunov, Marusik, 1999], East Kazakhstan [Eskov, Marusik, 1995] Oblasts. Central Ancient Mediterranean Range: from Turkey east to Central Asia [Seropian et al., 2023].

Cyrba ocellata (Kroneberg, 1875)

MATERIAL. KAZAKHSTAN: 3 ♀♀ (IZRK), Tyub-Karagan Peninsula, Dzhalgagan Cape, 44.61294°N, 50.83280°E, 43 m a.s.l., canyon, among stones, 13.05.2024, AN; 1 ♂ 1 ♀ (IZRK), [2].

Evarcha nenilini Rakov, 1997

Figs 10J–K, 11A–C

Salticidae gen. sp.: Nekhaeva, 2024, 239.

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [2]; 1 ♂ (IZRK), [1], 11.09.2024; 1 ♀ (IZRK), Caspian Sea coast, 43.081111°N 51.696111°E, –30 m a.s.l., sandy beach, with *Artemisia arenaria*, 2.09.2024, AN & LK.

REMARKS. New to Kazakhstan. Previously known from Uzbekistan, Tajikistan and Kyrgyzstan [Rakov, 1997]; apparently, a Central Asian endemic [Logunov, Ponomarev, 2020b].

Mogrus larisae Logunov, 1995

MATERIAL. KAZAKHSTAN: 1 ♀ 1 juv (IZRK), 9 km ESE Eralievo railway station, 43.196667°N 51.951111°E, 60 m a.s.l., desert, with *Salsola* spp., *Caroxylon orientale*, *Artemisia* spp., 3.09.2024, AN & LK.

REMARKS. New to Mangystau Oblast. In Kazakhstan, this species has been known from Atyrau [Ponomarev, 2022], Turkistan, Jambyl and Almaty Oblasts [Logunov, 1995]. Central Ancient Mediterranean range: Iran [Zamani et al., 2020], Kazakhstan, Uzbekistan, Turkmenistan and Kyrgyzstan [Logunov, 1995].

Phlegra andreevae Logunov, 1996

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [4].

REMARKS. New to Mangystau Oblast. In Kazakhstan, *P. andreevae* has been known from Karaganda, Turkistan, Jambyl, Almaty Oblasts [Azarkina, 2004]. Central Ancient



Fig. 11. Male palps of *Evarcha nenilini* (A–C), *Steatoda caspia* (D–F) and epigynes of *Heriaeus buffonopsis* (G, H), *Theridion arsia* (I, J): A, D, G, I — ventral view, B, E — retrolateral view, C, H, J — dorsal view, F — prolateral view.

Рис. 11. Пальпы самцов *Evarcha nenilini* (A–C), *Steatoda caspia* (D–F) и эпигины *Heriaeus buffonopsis* (G, H), *Theridion arsia* (I, J): A, D, G, I — вентрально, B, E — ретролатерально, C, H, J — дорсально, F — пролатерально.

Mediterranean range: Kazakhstan, Uzbekistan, Turkmenistan and Kyrgyzstan [Azarkina, 2004].

Pseudomogrus albocinctus (Kroneberg, 1875)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [1], 11.09.2024.

THERIDIIDAE

Asagena semideserta (Ponomarev, 2005)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [8]; 1 ♀ (IZRK), [4]; 1 ♂ (IZRK), [2].

REMARKS. New to Mangystau Oblast. This species was originally described from Atyrau Oblast, and was later found in two more regions of Kazakhstan: Turkistan and Karaganda Oblasts, as well as in Mongolia [Gromov, 2013; Marusik *et al.*, 2016].

Enoplognatha mediterranea Levy et Amitai, 1981

MATERIAL. KAZAKHSTAN: 4 ♀♀ (IZRK), [2].

REMARKS. New to Mangystau Oblast. In Kazakhstan, it has been earlier found only in the Kyzylkum Desert [Nekhaeva *et al.*, 2024]. West Central Ancient Mediterranean range: from the Greece and Israel in the west to central Kazakhstan in the east.

Kochiura aulica (C.L. Koch, 1838)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [2], 14.05.2024; 2 ♀♀ (IZRK), 15 km W of Kuryk Vil., 43.166667°N 51.484167°E, –20 m a.s.l., undulating sandy coastal plain, *Artemisia* association, 2.09.2024, AN & LK; 1 ♂ 2 ♀♀ (IZRK), 4 km W of Ersai seaport, 43.192778°N 51.543611°E, –20 m a.s.l., desert on hilly sands, with *Artemisia arenaria* and *Tamarix* sp., 2.09.2024, AN & LK.

Latrodectus pallidus O. Pickard-Cambridge, 1872

MATERIAL. KAZAKHSTAN: 6 ♀♀ (IZRK), c. 69 km SW of Zhanaozen, 42.92889°N, 52.19301°E, 72 m a.s.l., desert, with perennial *Salsola* spp., 3.09.2024, LK; 1 ♀ (IZRK), c. 34 km NW of Zhanaozen, 43.53720°N 52.49926°E, 222 m a.s.l., 5.09.2024, LK; 1 ♀ (IZRK), c. 42 km ENE of Jetibai Vil., 43.62806°N 52.63897°E, 262 m a.s.l., 5.09.2024, LK; 1 ♀ (IZRK), 52 km E of Eralievo railway station, 43.22048°N 52.45094°E, 126 m a.s.l., 3.09.2024, LK; 1 ♀ (IZRK), 10 km SSE of Kuryk Vil., 43.087500°N 51.699167°E, 10 m a.s.l., *Artemisia* association, 3.09.2024, LK; 1 ♀ (IZRK), 43 km WSW of Zhanaozen, 43.28965°N 52.31664°E, 138 m a.s.l., desert with *Artemisia* spp. and perennial *Salsola* spp., 4.09.2024, LK; 1 ♀ (IZRK), 30 km WNW of Fetisovo, 42.85791°N 52.29235°E, 72 m a.s.l., 3.09.2024, LK.

REMARKS. New to Mangystau Oblast. In Kazakhstan, *L. pallidus* has been earlier found only in the Kyzylkum Desert [Logunov, Gromov, 2012]; outside it, it is known from Cape Verde Isl. and South Africa to Uzbekistan [WSC, 2025].

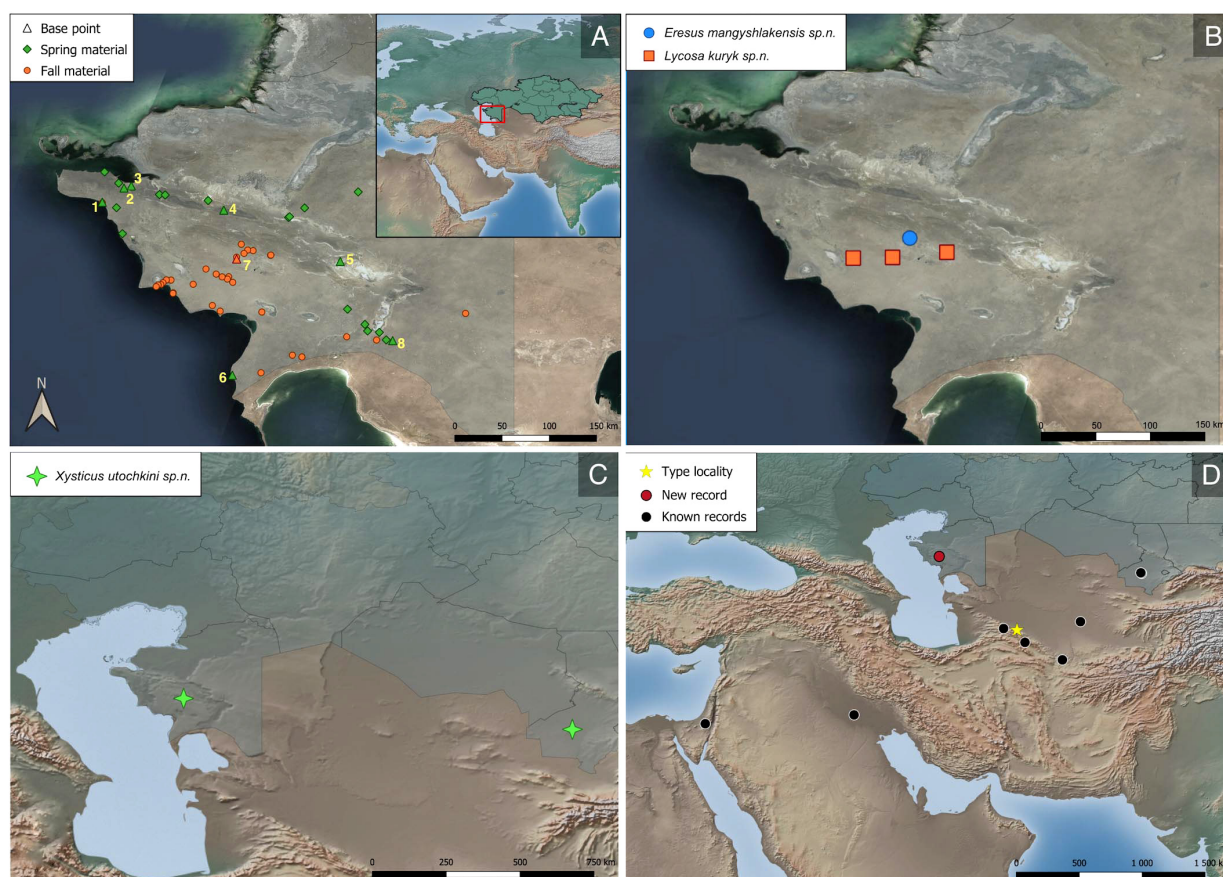


Fig 12. Map of main collecting localities of spiders (A), and distribution maps with records of *Eresus mangyshlakensis* sp.n. and *Lycosa kuryk* sp.n. (B), *Xysticus utochkini* sp.n. (C) and *Minosia karakumensis* (Spassky, 1939) (D).

Рис. 12. Карта основных мест сбора пауков (A) и карты распространения с находками *Eresus mangyshlakensis* sp.n. и *Lycosa kuryk* sp.n. (B), *Xysticus utochkini* sp.n. (C) и *Minosia karakumensis* (Spassky, 1939) (D).

Latrodectus tredecimguttatus (Rossi, 1790)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 51 km SE of Kenderly bay, 42.30246°N 53.20344°E, 175 m a.s.l., 8.09.2024, LK; 1 ♀ (IZRK), 17.4 km NE of Fetisovo, 42.84652°N 52.81830°E, -41 m a.s.l., 6.09.2024, LK.

Steatoda albomaculata (De Geer, 1778)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), Torysh Vil., 44.32254°N 51.59764°E, 143 m a.s.l., on the ground, 14.05.2024, AN; 1 ♀ (IZRK), 44.158611°N 53.357778°E, 240 m a.s.l., under dry ground, 16.05.2024, AN; 1 ♀ (IZRK), [2].

Steatoda caspia Ponomarev, 2007

Fig. 11D–F.

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [1], 13.05.2024.

REMARKS. The structure of the male palp of *S. caspia* is closest to that of *S. dahli* (Nosek, 1905), which is widespread in the Mediterranean and Middle Asia [WSC, 2025]. However, the male of *S. caspia* can be distinguished by the following characters (cf. Fig. 11D–F and fig. 36A–F in Van Keer *et al.* [2024]): 1) the embolus shorter than the theridiid regular apophysis (TTA), and has small elongated process at its base directed at 10 o'clock in retrolateral position (in *S. dahli*, the embolic length is comparable to or greater than the TTA length, the process at the embolic base short and rectangular); 2) TTA is approximately of the same width along its entire length (in *S. dahli*, TTA widens toward its apex); 3) prongs at TTA apex approximately of the same size, the lower prong curved (in *S.*

dahli, TTA lower prong larger than the upper one and curved inward); 4) the conductor is lobe-shaped in its terminal part (vs. lanceolate in *S. dahli*).

New to Mangystau Oblast. Previously known only from the type locality in Atyrau Oblast [Ponomarev, 2007].

Steatoda dahli (Nosek, 1905)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 44.16203°N 50.98315°E, 107 m a.s.l., desert, under stones, 12.05.2024, AN; 1 ♀ (IZRK), [4]; 2 ♂♂ 1 ♀ (IZRK), [2].

Theridion arsia Zamani et Marusik, 2021

Fig. 10I–J.

Theridion sp.: Nekhaeva, 2024, 239.

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 15 km W of Kuryk Vil., 43.166667°N 51.484167°E, -20 m a.s.l., undulating sandy coastal plain, *Artemisia* community, 2.09.2024, AN & LK; 1 ♀ (IZRK), Kyzylkum Desert, nr Shardara reservoir, 41.248611°N 67.90725°E, 7.04.2023, A. Yeszhanov.

REMARKS. New to Kazakhstan. Previously known only from the type locality in Qazvin Province, northern Iran [Zamani, Marusik, 2021].

THOMISIDAE

Bassaniodes tristrami (O. Pickard-Cambridge, 1872)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), Tyub-Karagan Peninsula, nr underground mosque Sultan-Epe, 44.471667°N 51.010278°E, 150 m a.s.l., among stones, 13.V.2024, AN; 1 ♂ (IZRK), [2].

Heriaeus buffonopsis Loerbroeks, 1983

Fig. 11G–H.

MATERIAL. KAZAKHSTAN: 2 ♀♀ (IZRK), ca 48 km W of Zhanaozen, 43.32496°N 52.24165°E, 136 m a.s.l., desert with *Artemisia* sp., *Caroxylon orientale*, 4.09.2024, AN & LK.

REMARKS. New to Mangystau Oblast. This species was originally described from Turkmenistan and Uzbekistan, and later reported from the Kyzylkum Desert [Utochkin, 1985] and Jambyl Oblast of Kazakhstan [Marusik, Logunov, 1995].

Monaeses israeliensis Levy, 1973

MATERIAL. KAZAKHSTAN: 1 juv. (IZRK), Ustyurt plateau, Ustyurt Nature Reserve, nr Onere spring, 42.60797°N 54.15281°E, 10 m a.s.l., sweeping, 19.05.2024, AN.

REMARKS. The collected specimen is subadult. However, it had all characteristic features of the genus *Monaeses* Thorell, 1869: viz., carapace shape, eyes on high tubercles, elongated abdomen with a cone-shaped folded “tail” extending far beyond spinnerets. With a high degree of probability, the specimen collected belongs to *M. israeliensis*, which was earlier recorded from Mangystau Oblast [Zyuzin, Tarabaev, 1994: 401], and also because its closest species — *M. paradoxus* (Lucas, 1846) — has not been found east of the Caucasus [WSC, 2025].

Ozyptila inaequalis (Kulczyński, 1901)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 15 km NW of Uzen Vil., 43.56156°N 52.92785°E, 250 m a.s.l., under stones, 4.09.2024, AN & LK; 1 ♀ (PSU-6353), [9].

REMARKS. New to Mangystau Oblast. In Kazakhstan, this species has been known from Akmola [Trilikauskas, Lyubchanskii, 2020], Abai, Turkistan and Almaty Oblasts [Marusik, Logunov, 1995]. Central East Ancient Mediterranean range: from western Kazakhstan throughout Mongolia to Central China (Sindong, Gansu and Inner Mongolia) [Marusik, Logunov, 2002].

Ozyptila tuberosa (Thorell, 1875)

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), 44.32742°N 51.52585°E, 132 m a.s.l., desert with *Artemisia*, 14.V.2024, AN; 1 ♀ (ZISP), Karakiya Distr., nr Zhanaozen, 43.33889°N 52.85556°E, 22–25.X.2024, VV; 1 ♀ (ZISP), Karakiya Distr., nr Kyzylsay Vil., 43.45°N 53.03°E, 26.10–01.11.2024, VV; 2 ♀♀ (ZISP), Karakiya Distr., Tokmak cape, 42.78°N 52.28°E, 24.09–13.10.2024, VV.

Thomisus onustus Walckenaer, 1805

MATERIAL. KAZAKHSTAN: 1 ♀ (IZRK), [4]; 1 ♀ (IZRK), [7].

Thomisus zyuzini Marusik et Logunov, 1990

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), [6]; 1 ♀ (IZRK), [3]; 1 ♂ 1 ♀ (IZRK), [1], 11.09.2024.

ZODARIIDAE

Zodariellum bactrianum (Kroneberg, 1875)

MATERIAL. KAZAKHSTAN: 1 ♂ (IZRK), 44.25180°N 52.13992°E, 118 m a.s.l., slope, scree, with Gramineae and Alliaceae, 14–15.05.2024, AN.

Conclusion

The present species list of the Mangystau collection studied consists of 84 species in 18 families, of which three — *Eresus mangyshlakensis* sp.n., *Lycosa kuryk* sp.n. and *Xysticus utochkinii* sp.n. — have been described as new to science. The family Dysderidae and 38 species (45% of the total number) have been reported from

Mangystau Oblast for the first time; five of them are new records to Kazakhstan: viz., *A. ahngerii*, *U. grossa*, *O. badhyzicus*, *E. nenilini*, *T. arsia*. The findings of *M. karakumensis*, *N. negebensis*, *O. pallida*, *I. pepticus*, *Z. anatolyi* and *T. arsia* in Mangystau Oblast show that their ranges are wider than previously thought.

Thus, based on new and earlier published data, the araneofauna of Mangystau Oblast consists of 195 species in 26 families. However, there are 10 species more in our collection that have not yet been identified and their treatment will be the subject of a separate paper.

Based on the results obtained from such a relatively small collection allows us to conclude that the spider fauna of south-west Kazakhstan still remains poorly understood and is worth of further detailed faunistic studies in the future.

Disclosure statement. No potential conflict of interest was reported by the authors.

Acknowledgments. The authors are grateful to Artem Tiunov (PSU) and Andrei Bush (Institute of Ecology and Evolution, Moscow, Russia), who helped us to take digital colour images; Andrey Grischenko (Zoological Museum of the Perm State University, Perm, Russia) and Anna Neretina (Institute of Ecology and Evolution, Moscow, Russia) for producing SEM micrographs. A. Nekhaeva and L. Kim are deeply obliged to A.F. Islamgulova (Institute of Botany and Phytointroduction, Almaty, Kazakhstan) for organizing the fieldworks, as well as to D.V. Malakhov (IZRK) for his assistance with collecting arachnids. We thank Kirill Mikhailov (ZMMU) for providing access to the type specimens of *Evarcha nenilini*, which allowed us to confirm the identification of our specimens. We are grateful to Dmitri Logunov (ZISP) for confirming the identifications of *Phlegma andreavae*, *Chalcoscirtus parvulus* and *C. tanasevichi*. Special thanks go to Dmitri V. Logunov for editing the English of the final draft. The study was conducted using the Joint Usage Center “Instrumental methods in ecology” at the IEE RAS. This research was funded by the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan, the Scientific Program “Sustainable Development of Natural-Industrial and Socio-Economic Systems of the West Kazakhstan Region in the Context of Green Growth: A Comprehensive Analysis, Concept, Forecast Estimates and Scenarios” (Grant No. BR21882122) and “Study of ecological, socio-demographic, economic-geographical, and paleobiogeographical aspects of the Urals and assessment of its natural resource potential” (Grant No. BR28712767).

References

- Al-Khazali A.M. 2024. New species and records of ground spiders (Araneae: Gnaphosidae) from Iraq // *Ecologica Montenegrina*. Vol.77. P.12–23.
- Azarkina G.N. 2003. *Aelurillus ater* (Kroneberg, 1875) and related species of jumping spiders in the fauna of Middle Asia and the Caucasus (Aranei: Salticidae) // *Arthropoda Selecta*. Vol.11 (for 2002). No.1. P.89–107.
- Azarkina G.N. 2004. New and poorly known Palaearctic species of the genus *Phlegma* Simon, 1876 (Araneae, Salticidae) // *Revue Arachnologique*. T.14. Fasc.6. P.73–108.
- Azarkina G.N., Nuruyeva T.V. 2021. First description of the female of *Evippa caucasica* Marusik, Guseinov et Koponen, 2003 (Aranei: Lycosidae) // *Euroasian Entomological Journal*. Vol.20. No.6. P.338–342.

- Copernicus Sentinel data. 2025. Retrieved from ASF DAAC [data access 22.02.2025], processed by ESA.
- Dunin P.M. 1989. [Materials on the fauna of spiders of the family Dysderidae (Aranei) from Turkmenistan] // Entomologicheskoe Obozrenie. Vol.68, No.4. P.865–874 [in Russian].
- Eskov K.Yu., Marusik Yu.M. 1995. On the spiders from Saur Mt. Range, Eastern Kazakhstan (Arachnida: Araneae) // Beiträge zur Araneologie. Bd.4 (für 1994). S.55–94.
- Esyunin S.L., Kabdrakhimov A.A., Efimik V.E. 2024. On the spiders (Aranei) collected by D.E. Kharitonov's expedition to Lake Zaisan, East Kazakhstan Area // Arthropoda Selecta. Vol.33. No.1. P.129–148.
- Esyunin S.L., Tuneva T.K. 2009. [A review of Palaearctic lynx-spiders of the *heterophthalmus* group of the genus *Oxyopes* (Aranei, Oxyopidae)] // Zoologicheskii Zhurnal. Vol.88. No.2. P.164–175 [in Russian].
- Fomichev A.A. 2015. On the spider fauna (Arachnida: Aranei) of the Altai Republic (Russia) // Acta Arachnologica. Vol.64. No.2. P.63–70.
- Fomichev A.A. 2022a. A survey of the East Palaearctic Gnaphosidae (Araneae). 12. A review of *Sidydrassus* Esyunin & Tuneva, 2002 // Zootaxa. Vol.5194. No.2. P.260–272.
- Fomichev A.A. 2022b. First record of the spider *Oecobius ferdowsii* Mirshamsi, Zamani & Marusik, 2017 (Araneae, Oecobiidae) in Kazakhstan // Check List. Vol.18. No.1. P.103–107.
- Fomichev A.A. 2022c. New data on spiders (Arachnida: Aranei) of the plain part of Altai Territory, Russia // Acta Biologica Sibirica. Vol.8. P.211–236.
- Fomichev A.A., Marusik Yu.M. 2020. The first record of the spider subfamily Urocteinae Thorell, 1869 (Aranei: Oecobiidae) in Tajikistan // Arthropoda Selecta. Vol.29. No.2. P.235–238.
- Fomichev A.A., Marusik Yu.M. 2021. A survey of East Palaearctic Gnaphosidae (Araneae). 11. New data on Gnaphosidae (Araneae) from Tajikistan // Zootaxa. Vol.4966. No.4. P.443–457.
- Gromov A.V. 2013. [Materials of the report “The state of the invertebrate fauna (insects, arachnids, mollusks) of specially protected natural areas of the Western Tien Shan, its monitoring, conservation and use in modern ecological conditions”] // Qaratau qoryǵy: Gylymi-tanymdyq көркем suretti kitap (Қарауау қорығы: Ғылыми-танымдық көркем суретті кітап). Almaty: Dala. P.98–116 [in Russian].
- Kharitonov D.E. 1946. [New forms of spiders of the USSR] // Izvestiya Estestvenno-Nauchnogo Instituta pri Molotovskom Gosudarstvennom Universitete imeni M. Gor'kogo. Vol.12. No.3. P.19–32 [in Russian].
- Kharitonov D.E. 1969. [Material to spider fauna of USSR] // Uchenye Zapiski Permskogo Ordena Trudovogo Krasnogo Znameni Gosudarstvennogo Universiteta Imeni A.M. Gor'kogo. Vol.179. P.59–133 [in Russian].
- Khasayeva Sh.I., Huseynov E.F. 2017. To the study of gnaphosid spiders (Aranei: Gnaphosidae) of Western Azerbaijan with suggestion of two new synonyms // Arthropoda Selecta. Vol.26. No.2. P.125–132.
- Kovács G., Prazsák I., Eichardt J., Vári G., Gyurkovics H. 2015. A new ladybird spider from Hungary (Araneae, Eresidae) // ZooKeys. Vol.494. P.13–30.
- Kovblyuk M.M., Gnelitsa V.A., Nadolny A.A., Kastrygina Z.A., Kukushkin O.V. 2016. Spiders (Arachnida: Aranei) of the Karadag Nature Reserve (Crimea) // Ekosistemy. (2015). No.3. P.23–88.
- Kryzhanoskiy O.L. 2002. [Composition and distribution of the entomofauna of the Globe]. Moscow: KMK Scientific Press. 237 p. [In Russian]
- Levy G. 1995. Revision of the spider subfamily Gnaphosinae in Israel (Araneae: Gnaphosidae) // Journal of Natural History. Vol.29. No.4. P.919–981.
- Levy G. 1999. The lynx and nursery-web spider families in Israel (Araneae, Oxyopidae and Pisauridae) // Zoosystema. Vol.21. P.29–64.
- Logunov D.V. 1995. New and little-known species of the jumping spiders from Central Asia (Araneae: Salticidae) // Zoosystematica Rossica. Vol.3. No.2. P.237–246.
- Logunov D.V. 1996. A critical review of the spider genera *Apollophanes* O. P.-Cambridge, 1898 and *Thanatus* C. L. Koch, 1837 in North Asia (Araneae, Philodromidae) // Revue Arachnologique. T.11. Fasc.13. P.133–202.
- Logunov D.V. 2015. Taxonomic-faunistic notes on the jumping spiders of the Mediterranean (Aranei: Salticidae) // Arthropoda Selecta. Vol.24. No.1. P.33–85.
- Logunov D.V. 2023a. Further notes on the fossorial wolf spiders of Middle Asia and the Near East (Aranei: Lycosidae) // Arthropoda Selecta. Vol.32. No.4. P.475–512.
- Logunov D.V. 2023b. On the jumping spiders (Araneae: Salticidae) from Iran collected by Antoine Senglet (1927–2015) // Arachnology. Vol.19. Pt.4. P.732–768.
- Logunov D.V., Gromov A.V. 2012. Spiders of Kazakhstan. Manchester: Siri Scientific Press. 232 p.
- Logunov D.V., Huseynov E.F. 2008. A faunistic review of the spider family Philodromidae (Aranei) of Azerbaijan // Arthropoda Selecta. Vol.17. No.1/2. P.117–131.
- Logunov D.V., Marusik Yu.M., Koponen S. 1998. A check-list of the spiders in Tuva, South Siberia with analysis of their habitat distribution (Arachnida: Araneae) // Berichte des Naturwissenschaftlich-medizinischen Vereins in Innsbruck. Bd.85. P.125–159.
- Logunov D.V., Marusik Yu.M. 1999. A brief review of the genus *Chalcoscirtus* Bertkau, 1880 in the fauna of Central Asia and the Caucasus (Aranei: Salticidae) // Arthropoda Selecta. Vol.7 (for 1998). No.3. P.205–226.
- Logunov D.V., Marusik Yu.M. 2000. Miscellaneous notes on Palaearctic Salticidae (Arachnida: Aranei) // Arthropoda Selecta. Vol.8 (for 1999). No.4. P.263–292.
- Logunov D.V., Ponomarev A.V. 2020a. *Karakumosa* gen. nov., a new Central Asian genus of fossorial wolf spiders (Araneae: Lycosidae: Lycosinae) // Revue Suisse de Zoologie. T.127. Fasc.2. P.275–313.
- Logunov D.V., Ponomarev A.V. 2020b. New species and records of Salticidae (Aranei) from Turkmenistan and neighbouring countries // Arthropoda Selecta. Vol.29. No.1. P.67–81.
- Lyakhov O.V. 2000. Contribution to the Middle Asian fauna of the spider genus *Thanatus* C. L. Koch, 1837 (Aranei: Philodromidae) // Arthropoda Selecta. Vol.8 (for 1999). No.4. P.221–230.
- Marusik Yu.M., Fet V. 2009. A survey of east Palearctic *Hersiliola* Thorell, 1870 (Araneae, Hersiliidae), with a description of three new genera // ZooKeys. Vol.16. P.75–114.
- Marusik Yu.M., Fomichev A.A., Tuneva T.K. 2016. Redescription of *Asagena semideserta* (Ponomarev, 2005) comb. n. (Araneae: Theridiidae) // Acta Zoologica Bulgarica. Vol.68. No.4. P.477–482.
- Marusik Y.M., Logunov D.V. 1995. The crab spiders of Middle Asia (Aranei, Thomisidae), 2 // Beiträge zur Araneologie. Bd.4 (für 1994). P.133–175.
- Marusik Y.M., Logunov D.V. 2002. New and poorly known species of crab spiders (Aranei: Thomisidae) from South Siberia and Mongolia // Arthropoda Selecta. Vol.10 (for 2001). No.4. P. 315–322.
- Marusik Y.M., Mikhailov K.G. 2021. Revalidation of *Xysticus tuberosus* Thorell, 1875 (Aranei: Thomisidae) with notes on the related species // Arthropoda Selecta. Vol.30. No.1. P.119–124.
- Marusik Y.M., Tarabaev Ch.K., Litovchenko A.M. 1990. [Catalogue of the orb-weaving spiders of Kazakhstan. Family Araneidae] // Bulletin of the Academy of Sciences of the Kazakh SSR. Biology series. Vol.4. P.14–23 [in Russian].
- Mikhailov K.G. 2024a. Progress in the study of the spider fauna (Aranei) of Russia and neighbouring regions: a 2022 update // Arthropoda Selecta. Vol.33. No.3. P.425–432 (with supplements).
- Mikhailov K.G. 2024b. Checklist of spiders (Arachnida: Aranei) of Russia and neighboring countries (as of 2022) // Arthropoda Selecta. Supplement No.7. 311 p.
- Mikhailov K.G., Fet V.Yu. 1986. [Contribution to the spider fauna (Aranei) of Turkmenia. I. Families Anyphaenidae, Sparassidae, Zoridae, Clubionidae, Micariidae, Oxyopidae] // Sbornik Trudov Zoologicheskogo Muzeya MGU, Moscow State University. Vol.24. P.168–186. [in Russian].
- Mikhailov K.G., Fet V. 1994. Fauna and zoogeography of spiders (Aranei) of Turkmenistan // V. Fet, K.I. Atamuradov (eds.). Biogeography and Ecology of Turkmenistan. Springer-Science+Business Media, B.V. P.499–524.
- Nekhaeva A.A. 2024. [New data on spiders (Aranei) of Mangystau Peninsula and Ustyurt Plateau] // A.P. Laktionov (ed.). Sovremennoe sostoyanie i problemy sokhraneniya bioraznoobraziya plato Ustyurt: materialy mezhdunarodnoi nauchno-prakticheskoi konferencii, posveshchennoi 40-letiyu Ustyurtskogo prirodnogo gosudarstvennogo zapovednitsa (Zhanaozen, Kazakhstan). V.N. Tatishchev Astrakhan State University. P.237–240 [in Russian].
- Nekhaeva A.A., Kim L.V., Yeszhanov A.B. 2024. New data on the spider fauna (Arachnida: Aranei) of the East Kyzylkum Desert,

- Kazakhstan // *Arthropoda Selecta*. Vol.33. No.3. P.391–405.
- Nentwig W., Blick T., Gloor D., Hänggi A., Kropf C. 2025. Spinnen Europas, online at: <https://www.araneae.nmbe.ch>, version 03.2025 (accessed on March 20th, 2025); doi: 10.24436/1.
- Ono H. 1988. A revisional study of the spider family Thomisidae (Arachnida, Araneae) of Japan. National Science Museum Tokyo. 252 p.
- Ovtsharenko V.I. 1982. [A systematic list of the spider family Gnaphosidae (Aranei) of the European part of the USSR and the Caucasus] // *Entomologicheskoe Obozrenie*. Vol.61. No.4. P.830–844 [in Russian].
- Ovtsharenko V.I., Fet V.Yu. 1980. [Fauna and ecology of spiders (Aranei) of Badkhyz (Turkmenian SSR)] // *Entomologicheskoe Obozrenie*. Vol.59. No.2. P.442–447 [in Russian].
- Ovtsharenko V.I., Levy G., Platnick N.I. 1994. A review of the ground spider genus *Synphosus* (Araneae, Gnaphosidae) // *American Museum Novitates*. No.3095. P.1–27.
- Ovtsharenko V.I., Platnick N.I., Song D.X. 1992. A review of the North Asian ground spiders of the genus *Gnaphosa* (Araneae, Gnaphosidae) // *Bulletin of the American Museum of Natural History*. Vol.212. P.1–88.
- Polchaninova N.Yu., Prokopenko E.V. 2015. Catalogue of the spiders (Arachnida, Aranei) of Left-Bank Ukraine // *Arthropoda Selecta*. Supplement No.2. Moscow: KMK Scientific Press. 268 p.
- Ponomarev A.V. 2007. [New taxa of spiders (Aranei) from the south of Russia and western Kazakhstan] // *Caucasian Entomological Bulletin*. Vol.3. No.2. P.87–95 [in Russian].
- Ponomarev A.V. 2018. [A new species of spiders of the genus *Zelotes* Gistel, 1848 (Aranei: Gnaphosidae) from the north-east Pre-Caspian region] // *Caucasian Entomological Bulletin*. Vol.14. No.1. P.3–5 [in Russian].
- Ponomarev A.V. 2022. [Spiders (Arachnida: Araneae) of the southeast of the Russian Plain: Catalogue, the fauna specific features]. Rostov-on-Don: SSC RAS Publishers. 640 p. [In Russian]
- Ponomarev A.V., Abdurakhmanov G.M. 2014. [Spiders (Aranei) of North Caspian coast and islands] // *Yugh Rossii: ecologiya, razvitie*. No.1. P.76–121 [in Russian].
- Ponomarev A.V., Bragina T.M. 2014. [Preliminary data on the spider fauna (Aranei) of specially protected natural areas of the Kostanay Region (Republic of Kazakhstan)] // *Yugh Rossii: ecologiya, razvitie, development*. No.4. P.46–57 [in Russian].
- Ponomarev A.V., Bragina T.M., Shmatko V.Yu. 2017. [New data on spiders (Aranei) of the Naurzum State Natural Reserve (Kostanay Region, Kazakhstan)] // *Caucasian Entomological Bulletin*. Vol.13. No.1. P.3–10 [in Russian].
- QGIS Development Team. 2025. QGIS Geographic Information System. Open Source Geospatial Foundation Project. Available at <http://qgis.osgeo.org>.
- Rakov S.Yu. 1997. A review of the spider genus *Evarcha* Simon, 1902 in Middle Asia (Aranei Salticidae) // *Arthropoda Selecta*. Vol.6. No.1/2. P.105–112.
- Řezáč M., Pekár S., Johannesen J. 2008. Taxonomic review and phylogenetic analysis of Central European *Eresus* species (Araneae: Eresidae) // *Zoologica Scripta*. Vol.37. No.3. P.263–287.
- Saaristo M.I. 2007. A new subfamily of linyphiid spiders based on a new genus created for the *keyserlingi*-group of the genus *Lepthyphantes* (Aranei: Linyphiidae) // *Arthropoda Selecta*. Vol.16. No.1. P.33–42.
- Sadeghi H., Ahmadi M., Zamani A., Jabaleh I. 2016. A study on the spider fauna of Dargaz and Kalat Counties in Razavi Khorasan Province, Iran (Arachnida: Araneae) // *Biharean Biologist*. Vol.10. No.1. P.4–7.
- Savel'eva L.G. 1970. [Fauna and zoogeographic connections of spiders of the East Kazakhstan Region] // *Biologiya i geographiya*. No.6. P.78–88 [in Russian].
- Seropian A., Bulbulashvili N., Otto S., Krammer H.-J., Kachlishvili N., Datunashvili A. 2023. Picking pearls from the Silk Road: insights into the spider (Arachnida, Araneae) diversity in Georgia from the Caucasus barcode of life project. Part II // *Caucasiana*. No.2. P.231–297.
- Seropian A., Bulbulashvili N., Krammer H.-J., Thormann J., Hein N., Karalashvili E., Kachlishvili N., Datunashvili A. 2024. Picking pearls from the Silk Road: insights into the spider (Arthropoda, Araneae) diversity in Georgia from the Caucasus Barcode of Life (CaBOL) project. Part III // *Caucasiana*. No.3. P.89–118.
- Šestáková A., Krumpál M., Krumpálová Z. 2009. Araneidae (Araneae) Strednej Európy: I. Rod *Araneus*. Bratislava. 151 p.
- Sozontov A.N., Esyunin S.L. 2022. Spiders of the Udmurt Republic: fauna, ecology, phenology and distribution // *Arthropoda Selecta*. Supplement No.5. 285 p.
- Spassky S.A. 1939. Araneae palaearcticae novae. III // *Festschrift Embrik Strand*. Riga. Bd.5. P.138–144.
- Spassky S.A., Shnitnikov V.N. 1937. [Materials to the spider fauna of the Kazakhstan] // *Trudy Kazakhskogo filiala AN SSSR*. Vol.2. P.265–300 [in Russian].
- Tanasevitch A.V. 1988. Some new *Lepthyphantes* Menge (Aranei, Linyphiidae) from Mongolia and the Soviet Far East // *Folia Entomologica Hungarica*. Vol.49. P.185–196.
- Tanasevitch A.V. 2009. The linyphiid spiders of Iran (Arachnida, Araneae, Linyphiidae) // *Revue Suisse de Zoologie*. T.116. P.379–420.
- Tanasevitch A.V. 2010. Order Araneae, family Linyphiidae // *Arthropod fauna of the UAE*. No.3. P.15–26.
- Tiunov A.V., Esyunin S.L. 2014. [Orb-weaver spiders of the genus *Argiope* (Aranei, Araneidae) from Russia and Central Asia] // *Zoologicheskii Zhurnal*. Vol.93. No.11. P.1316–1325 [in Russian].
- Trilikauskas L.A., Lyubchanskii I.I. 2020. [Distribution of spiders (Arachnida: Araneae) in the zonal-catena matr09 of the steppes of Central Kazakhstan] // *Sibirskii ekologicheskii zhurnal*. No.5. P.587–599 [in Russian].
- Utochkin A.S. 1985. [Materials of the spider genus *Heriaeus* (Aranei, Thomisidae) of the USSR] // *Fauna i ekologiya paukov*. Trudy Zoologicheskogo Instituta AN SSSR. Leningrad. Vol.139. P.105–113 [in Russian].
- Van Keer J., Bosselaers J., Oger P. 2024. Description of four new *Steatoda* species (Araneae: Theridiidae) from the Mediterranean region with notes on some related species // *Journal of the Belgian Arachnological Society*. Vol.39. No.2, supplement. P.1–77.
- WSC. 2025. World Spider Catalog. 2025. World Spider Catalog. Version 25.5. Natural History Museum Bern. Available from: <http://wsc.nmbe.ch> (accessed on 03.02.2025).
- Zamani A., Bosselaers J. 2020. The spider family Oecobiidae (Arachnida: Araneae) in Iran, Afghanistan and Turkmenistan // *European Journal of Taxonomy*. Vol.726. P.38–58.
- Zamani A., Hosseini M.S., Moradmand M. 2020. New data on jumping spiders of Iran, with a new species of *Salticus* (Araneae: Salticidae) // *Arachnologische Mitteilungen*. No.59. P.63–66.
- Zamani A., Marusik Yu.M. 2021. Two new species of Theridiidae from Iran, and the revalidation of *Enoplognatha submargarita* Yaginuma & Zhu, 1992 (Arachnida: Araneae) // *Arachnology*. Vol.18. Pt.8. P.957–964.
- Zamani A., Mirshamsi O., Jannesar B., Marusik Yu.M., Esyunin S.L. 2015. New data on spider fauna of Iran (Arachnida: Araneae), Part II // *Zoology and Ecology*. Vol.25. No.4. P.339–346.
- Zamani A., Nadolny A.A., Esyunin S.L., Marusik Yu.M. 2022. New data on the spider fauna of Iran (Arachnida: Araneae), Part 09 // *Arachnology*. Vol.19. Special Issue. P.358–384.
- Zamani A., Nikmaghan Z., Allahdadi M., Ghassemzadeh F., Mirshamsi O. 2014. New data on the spider fauna of Iran (Arachnida: Araneae) // *Zoology in the Middle East*. Vol.60. No.4. P.362–367.
- Zonstein S., Marusik Y.M. 2016. A revision of the spider genus *Zaitunia* (Araneae, Filistatidae) // *European Journal of Taxonomy*. Vol.214. P.1–97.
- Zyuzin A.A. 1993. Studies on the wolf spiders (Araneae: Lycosidae). I. A new genus and species from Kazakhstan, with comments on the Lycosinae // *Memoirs of the Queensland Museum*. Vol.33. No.2. P.693–700.
- Zyuzin A.A., Tarabaev Ch.K. 1994. The spiders and scorpions inhabiting Ustyurt Plateau and Mangyshlak Peninsula (South-Western Kazakhstan) // *Bollettino della Sedute Accademia Gioenia di Scienze Naturali*. Vol.26. No.1993. P.395–404.