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A new species of *Alopecosa* Simon, 1885 (Arachnida: Aranei: Lycosidae) from Kazakhstan

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Abstract. A new species *Alopecosa talgarensis* sp. n. from Kazakhstan (Almaty Region: Trans-Ili Alatau Mts) is diagnosed, illustrated and described. The new species is most similar to *A. xinjiangensis* Hu et Wu, 1989 (China: Xinjiang), from which it can be easily distinguished by the sharply pointed median apophysis with its tip bent ventrad and the much thicker embolus in males, and the strip-shaped median septum in females. A brief justification is provided for the assignment of this unusual species to the genus *Alopecosa* Simon, 1885. The finding of *A. talgarensis* sp. n. at elevations of 2300–2700 m a.s.l. represents one of the highest-altitude records known for *Alopecosa* species.

Key words: new species, Araneae, *Alopecosa*, distribution, Trans-Ili Alatau.

Новый вид *Alopecosa* Simon, 1885 (Arachnida: Aranei: Lycosidae) из Казахстана

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Резюме. Диагностирован, иллюстрирован и описан новый вид *Alopecosa talgarensis* sp. n. из Казахстана (Алматинская область: Заилийский Алатау). Новый вид наиболее схож с *A. xinjiangensis* Hu et Wu, 1989 (Китай: Синьцзянь), от которого его легко можно отличить по остроконечному медиальному апофизу с загнутым вентрально кончиком и значительно более толстому эмболюсу у самцов, а также полосообразным септумом эпигины у самок. Дается краткое обоснование отнесения этого необычного вида к роду *Alopecosa* Simon, 1885. Обнаружение *A. talgarensis* sp. n. на высотах 2300–2700 м н.у.м. является одним из самых высокогорных зарегистрированных случаев встречаемости видов рода *Alopecosa*.

Ключевые слова: новый вид, Araneae, *Alopecosa*, распространение, Заилийский Алатау.

Introduction

The genus *Alopecosa* Simon, 1885 is one of the large, likely paraphyletic genera of the Lycosidae, accounting for 171 named species worldwide [World Spider Catalog, 2026]. In Kazakhstan, it consists of 37 species recorded/described to date [Logunov, Gromov, 2012; Mikhailov, 2024]. Despite the seemingly large number of *Alopecosa* species found in Kazakhstan, the actual regional diversity and distribution of most of them remain poorly understood. Many species are still known only from their original descriptions and corresponding type localities, for instance, *A. ermolaevi* Saveljeva, 1972 [Savelyeva, 1972], *A. notabilis* (Schmidt, 1895) [Schmidt, 1895] or *A. saurica* Marusik, 1995 [Eskov, Marusik, 1995]. The aim of the present paper is to describe a new *Alopecosa* species from south-east Kazakhstan, collected from the elevations of 2300–2700 m a.s.l. in Trans-Ili Alatau Mts.

Material and methods

The type specimens of the new *Alopecosa* species have been shared between the Institute of Systematics and Ecology of the Russian Academy of Sciences (ISEA,

Novosibirsk, Russia; curator: G.N. Azarkina), the Manchester Museum, University of Manchester (MMUE, UK; curator: D. Arzuza Buelvas), and the Zoological Institute of the Russian Academy of Sciences (ZISP, St Petersburg, Russia; curator: D.V. Logunov). Comparative materials on *Alopecosa fabrilis* (Clerck, 1757) were borrowed from ISEA and MMUE.

Digital photographs were made at the Manchester Museum, using an Olympus SZX16 stereo microscope with a DP27 Digital Colour Camera, and Helicon Focus 7.7.2 as the processing software. SEM micrographs were made 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 of the Russian Academy of Sciences (IEE RAS, Moscow, Russia).

The terminology of copulatory organs is given according to Dondale, Redner [1990] with modifications, the description format follows Logunov [2010, 2023]. Abbreviations used in the text, tables and figures: AER – anterior eye row; AME – anterior median eye, ALE – anterior lateral eye, C – cymbium, d – dorsal, E – embolus, EB – embolic base, FC – functional conductor, FD – fertilization ducts, Fm – femur, MA – median apophysis, MS – median septum, Mt – metatarsus, nr – near, Pl –

palea, PME – posterior median eye, PLE – posterior lateral eye, pr – prolateral, PR – primary receptacle, Pt – patella, rt – retrolateral, Se – synembolus, SER – second eye row, SR – secondary receptacle, St – subtegulum, T – tegulum, Tb – tibia, TER – third eye row, Tr – tarsus, v – ventral. For the leg spination the system adopted is that used by Ono [1988]. The term ‘spine’ is used to describe pointed,

rigid and usually articulating macrosetae on legs, the term ‘vulva’ is used for internal structures of female copulatory organs, and the term ‘receptacle’ is used as a synonym of ‘spermatheca’ [Jocqué, Dippenaar-Schoeman, 2006: 25]. The sequence of leg podomeres in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus (total). All measurements are in mm.

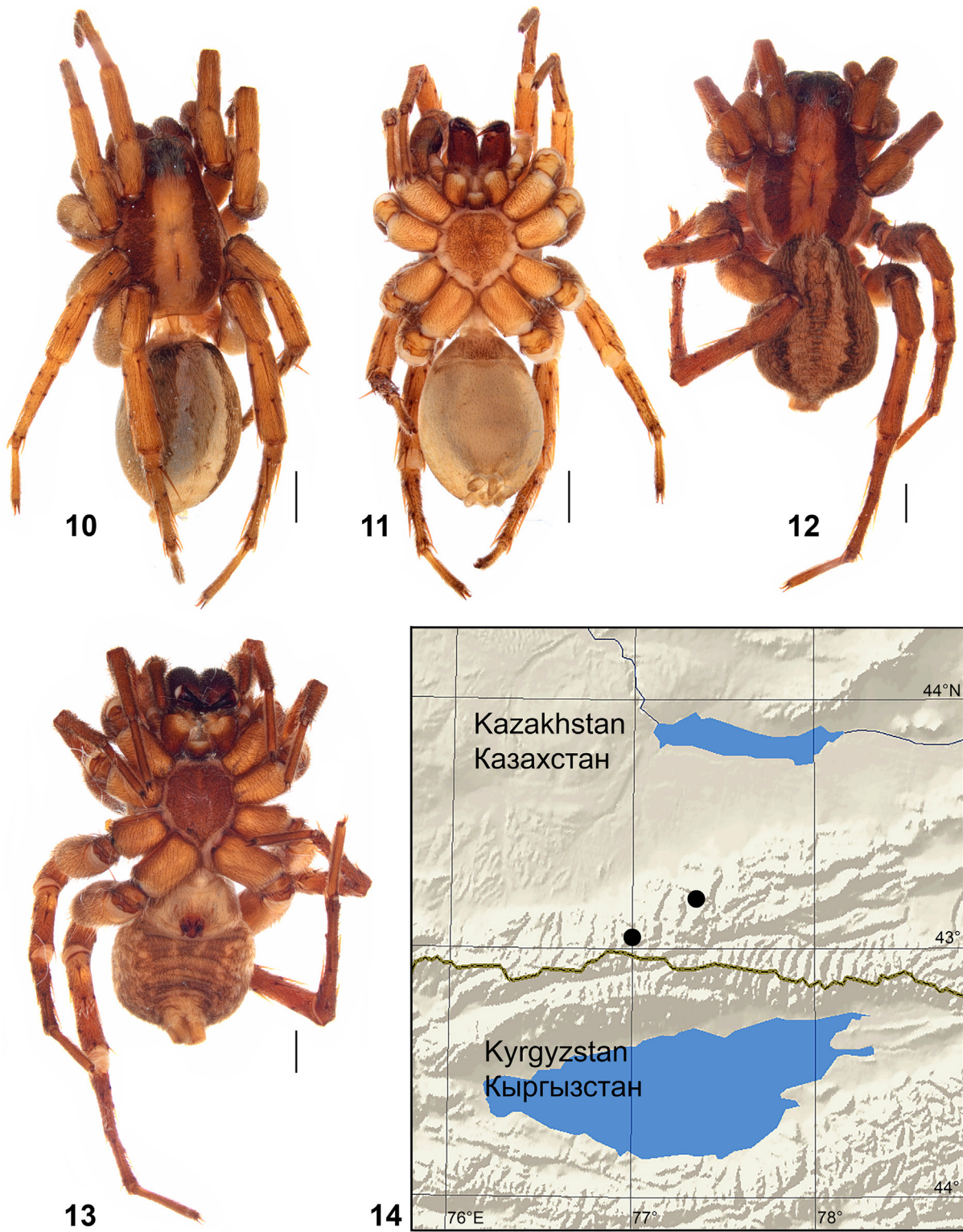


Figs 1–9. *Alopecosa talgarensis* sp. n., copulatory organs, paratypes (ISEA, 001.9300).

1–6, 9 – males; 7–8 – female. 1 – bulbus, ventral view; 2 – bulbus without embolar division, apical view; 3 – bulbus, retrolateral view; 4 – embolar division, apical view; 5 – synembolus and embolus, apical view; 6 – embolar tip, apical view; 7 – epigyne, ventral view; 8 – vulva, dorsal view; 9 – palp, retrolateral view. Scale bars: 9 – 0.5 mm; 1–3, 7–8 – 0.2 mm; 4 – 0.1 mm; 5 – 50 μ m; 6 – 20 μ m.

Рис. 1–9. *Alopecosa talgarensis* sp. n., копулятивные органы, паратипы (ISEA, 001.9300).

1–6, 9 – самцы; 7–8 – самка. 1 – бульбус, снизу; 2 – бульбус без эмболярного отдела, апикально; 3 – бульбус, сбоку – сзади; 4 – эмболярный отдел, апикально; 5 – синэмболюс и эмболюс, апикально; 6 – вершина эмболюса, апикально; 7 – эпигина, снизу; 8 – вульва, сверху; 9 – пальпа, сбоку – сзади. Масштабные линейки: 9 – 0.5 мм; 1–3, 7–8 – 0.2 мм; 4 – 0.1 мм; 5 – 50 μ m; 6 – 20 μ m.



Figs 10–14. *Alopecosa talgarensis* sp. n., general appearance, paratypes (ISEA, 001.9300) and map of distribution.
 10–11 – male; 12–13 – female. 10, 12 – dorsal view; 11, 13 – ventral view. 14 – collecting localities. Scale bars 1 mm.
 Рис. 10–14. *Alopecosa talgarensis* sp. n., паратипы (ISEA, 001.9300) и карта распространения.
 10–11 – самец; 12–13 – самка. 10, 12 – сверху; 11, 13 – снизу. 14 – точки находок. Масштабные линейки 1 мм.

Genus *Alopecosa* Simon, 1885

Type species *Araneus fabrilis* Clerck, 1757, by original designation [Simon 1885: 10, sub *Lycosa* f.].

Alopecosa talgarensis sp. n.

(Figs 1–21, 25, 27, 28)

Material. Holotype, ♂ (ISEA, 001.9299): Kazakhstan, c. 15 km S of Almaty, Trans-Ili Alatau Mts, nr Big Almaty Lake (c. 43°02'40"N / 76°59'27"E), 2500–2700 m a.s.l., 11–12.09.1996 (A.A. Zyuzin). Paratypes: 12♂, 18♀ (ISEA, 001.9300; Figs 1–9), 2♂, 2♀ (MMUE, G7734.1; Figs 21, 25, 28), together with the holotype; 1♂, 2♀ (ZISP, ARA_ARA_0001082; Figs 10–20), Kazakhstan, Almaty Region, Talgar Distr., Trans-Ili Alatau Mts, Almaty State Reserve, c. 11 km SE of Talgar, Right Talgar River Canyon, left riverside, above Dal'nyaya Kerzhanka Boundary (c. 43°12'28.2"N / 77°20'08.9"E), 2300–2500 m a.s.l., 4–11.09.1984 (S.I. Deryugin).

Comparative material. *Alopecosa fabrilis*: 1♂ (MMUE, G7512.2141; Fig. 23), UK, Dorset, Morden Heath, 09.1963 (P. Merrett); 1♂, 3♀ (MMUE, G7502.425; Figs 22, 24), UK, no exact locality, date and collector name; 1♂, 1♀ (ISEA, 001.9087; Fig. 26), Germany, Bavaria, 1.5 km N of Pleinfeld, c. 49°07'N / 10°58'E, sand-filled quarry near the Brombach stream, 29.08–12.09.1985 (G. Schmidt).

Diagnosis. Of a particular *Alopecosa* species, *A. talgarensis* sp. n. (Figs 1–9, 15–21) is most similar to *A. xinjiangensis* Hu et Wu, 1989 known from north-west China (Xinjiang) and neighbouring regions of Mongolia [Marusik et al., 2007: figs 3–8, 27, 51]. The new species can be easily distinguished from it by the following characters: the median apophysis more sharply pointed with its tip bent ventrad (Figs 2, 3, 16; vs. not bent in *A. xinjiangensis*), the embolus very thick, almost triangular (Figs 4–6; vs. narrow, stiletto-shaped), and the median septum strip-shaped, with curving lateral sides (Fig. 7; vs. arrow-shaped in *A. xinjiangensis*).

However, the conformation of the male copulatory organs in *A. talgarensis* sp. n. (Figs 1–6, 15–17) is indeed unique compared to all the described *Alopecosa* species: i.e., the median apophysis with the sharply pointed retrolateral tip that is bent ventrad (Figs 1–3: MA) and the embolus very wide, with obtuse-round tip that is bent apicad and with an unusual, slit-shaped pore at the embolic tip (Figs 5, 6: E). The female of *A. talgarensis* sp. n.

(Figs 7, 8, 18–20) is also similar to congeners of the *cursor* species group (sensu Lugetti, Tongiorgi [1969]), but readily differs from all of them in the absence of epigynal hoods (Figs 7, 18; vs. always present in the *cursor* group, forming a transverse rim that limits the medial septum from its proximal end).

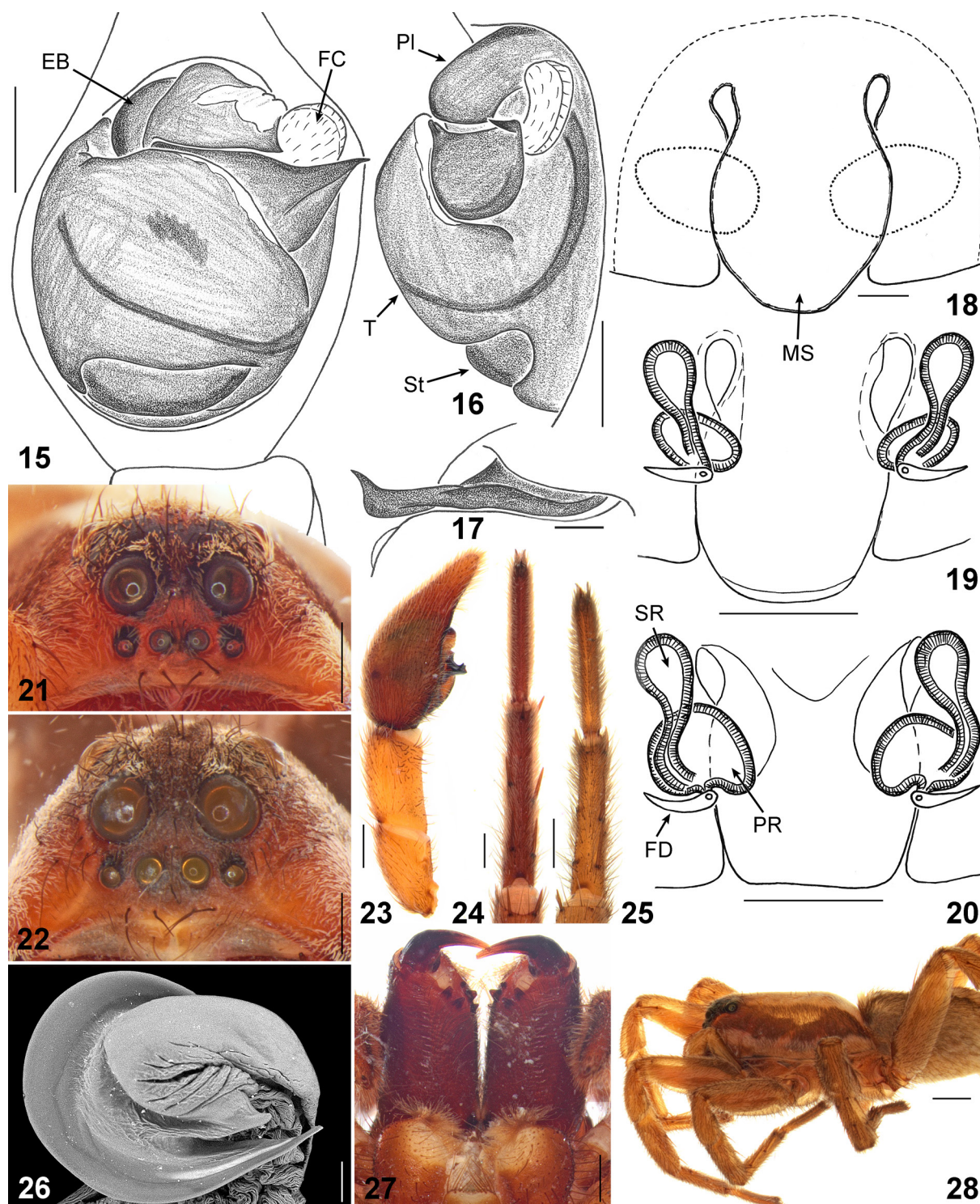
Description. Male (holotype). Measurements. Carapace 4.6 long, 3.2 wide. Eye sizes and interdistances: AME 0.13, ALE 0.1, PME 0.32, PLE 0.23, AME–AME 0.08, AME–ALE 0.06, PME–PME 0.3, PLE–PLE 0.8. Width of anterior eye row 0.76, second row 0.96, third row 1.18. Clypeus height 0.22, chelicera length 1.75. Abdomen 3.5 long, 2.5 wide. Length of leg segments: I 3 + 1.4 + 2 + 2 + 1.5 (9.9); II 2.7 + 1.4 + 1.9 + 2 + 1.4 (9.4); III 2.5 + 1.3 + 1.7 + 2.1 + 1.4 (9); IV 3.2 + 1.4 + 2.5 + 3.6 + 1.8 (12.5). Spination of leg I: Fm d 1-1-1, pl 0-0-1, rl 1-1-1 all small; Pt pl 1-0; Tb pl, rl 1-1, v 2-2-2ap; Mt pl, rl 1-1-1ap, v 2-2-2ap. Palp spination: Fm d 1-1-2ap, pl, rl 0-0-1, Pt pl 1-0, Tb pl 1-1-0. Variation (paratype males; ISEA, 001.9300, $n = 10$): body length 7.7 ± 0.21 (6.5–8.9); variation in other parameters for males are given in Tables 1–3. Spination of leg I (males; $n = 10$): Fm d 1-1-1, pl 0-0-1, rl 1-1-1 all small; Pt pl 1-0; Tb pl, rl 1-1, v 2-2-2ap; Mt pl, rl 1-1-1ap, v 2-2-2ap. Palp spination: Fm d 1-1-2ap, pl, rl 0-0-1, Pt pl 1-0, Tb d 1 or 0, pl 1-1-0. Colouration (the holotype, in alcohol; Figs 10, 11). Carapace yellow, with a wide longitudinal median and two marginal yellowish bands of white recumbent setae, and two longitudinal wide dark brown stripes. Sternum yellowish brown, covered with black protruded hairs. Labium and endites brown, with light yellow tips. Chelicerae dark brown. Abdomen: dorsum brown, with a wide longitudinal median whitish band on which poorly marked brownish cardiac mark is visible; sides and venter yellowish. Book-lungs yellow, tinged with brown; spinnerets yellow. All legs and palps yellow-brown. Palpal structure as in Figs 1–6, 15–17: cymbium elongated, 1.8 times as long as wide, with obtuse tip densely covered with thick setae (no bristles), 1.7 times longer than palpal tibia; tegulum oval, slightly wider (1.1 times) than long; subtegulum elongated, its central part sitting at 5 o'clock; median apophysis thin, elongated-triangular, with the sharply pointed retrolateral tip that is bent ventrad; synembolus well-marked, cone-shaped; embolus very thick, almost triangular, with well-developed *pars pendula* and wide, obtuse hook-shaped tip that is bent apicad and having an unusual, slit-shaped pore at its tip; conductor poorly-marked, round and flat.

Female (paratypes; ISEA, 001.9300, $n = 10$). Measurements: body length 9.2 ± 0.33 (8–10.6); variation in other parameters

Table 1. Variation in leg podomere length of paratypes of *Alopecosa talgarensis* sp. n. Average $\pm$ SE, range in parentheses.

Таблица 1. Различия в длине сегментов ног паратипов *Alopecosa talgarensis* sp. n. Среднее значение $\pm$ SE, диапазон в скобках.

Sex Пол	Podomere Сегмент	Fm	Pt	Tb	Mt	Tr	Total
Males Самцы ($n = 10$)	I	2.7 ± 0.04 (2.5–2.8)	1.3 ± 0.03 (1.2–1.5)	1.9 ± 0.02 (1.9–2)	2 ± 0.03 (1.9–2.2)	1.5 ± 0.02 (1.4–1.6)	9.4 ± 0.08 (9.0–9.8)
	II	2.5 ± 0.03 (2.4–2.7)	1.3 ± 0.03 (1.1–1.4)	1.8 ± 0.02 (1.6–1.8)	1.9 ± 0.02 (1.8–2)	1.4 ± 0.02 (1.2–1.4)	8.8 ± 0.07 (8.5–9.2)
	III	2.5 ± 0.04 (2.2–2.6)	1.3 ± 0.04 (1.1–1.4)	1.7 ± 0.11 (1.5–2.7)	2.1 ± 0.05 (1.8–2.3)	1.2 ± 0.02 (1.1–1.3)	8.8 ± 0.14 (8.3–9.7)
	IV	3.2 ± 0.05 (3–3.5)	1.4 ± 0.04 (1.2–1.5)	2.4 ± 0.04 (2.2–2.5)	3.1 ± 0.06 (2.7–3.3)	1.6 ± 0.09 (1.5–2.4)	11.7 ± 0.19 (10.8–12.7)
Females Самки ($n = 10$)	I	3.0 ± 0.09 (2.6–3.5)	1.5 ± 0.03 (1.4–1.6)	2 ± 0.06 (1.8–2.4)	2.0 ± 0.04 (1.8–2.2)	1.4 ± 0.04 (1.3–1.7)	9.9 ± 0.25 (9.0–11.4)
	II	2.8 ± 0.07 (2.4–3.1)	1.4 ± 0.02 (1.3–1.5)	1.8 ± 0.04 (1.7–2.1)	1.9 ± 0.04 (1.7–2.1)	1.4 ± 0.02 (1.3–1.5)	9.3 ± 0.18 (8.6–10.3)
	III	2.6 ± 0.05 (2.4–3)	1.4 ± 0.05 (1.1–1.6)	1.7 ± 0.05 (1.5–2)	2.2 ± 0.05 (2–2.4)	1.3 ± 0.03 (1.2–1.5)	9.2 ± 0.18 (8.6–10.3)
	IV	3.5 ± 0.08 (3.2–4)	1.6 ± 0.03 (1.4–1.7)	2.6 ± 0.06 (2.4–2.9)	3.5 ± 0.07 (3.2–4)	1.7 ± 0.04 (1.5–1.9)	12.9 ± 0.24 (12.0–14.5)



Figs 15–28. Copulatory organs and somatic characters of species of the genus *Alopecosa*.

15–21, 25, 27–28 – *A. talgarensis* sp. n.: 15–20, 27 – paratypes (ZISP, ARA_ARA_0001082), 21, 25, 28 – paratypes (MMUE, G7734.1); 22–24, 26 – *A. fabrilis*: 22, 24 – female (MMUE, G7502.425), 23 – male (MMUE, G7512.2141), 26 – male (ISEA, 001.9087). 15–16 – bulb: 15 – ventral view, 16 – retrolateral view; 17 – median apophysis, apical view; 18 – epigyne, ventral view; 19–20 – vulva, dorsal view; 21–22 – female carapace, front view; 23 – male palp, retrolateral view; 24–25 – female tarsi I and metatarsi I, ventral view; 26 – embolar division, apical view (photograph by G.N. Azarkina); 27 – female chelicerae, ventral view; 28 – female habitus, lateral view. Scale bars: 28 – 1 mm; 21–25, 27 – 0.5 mm; 15–16, 19–20 – 0.25 mm; 17–18, 26 – 0.1 mm.

Рис. 15–28. Копулятивные органы и соматические признаки видов рода *Alopecosa*.

15–21, 25, 27–28 – *A. talgarensis* sp. n.: 15–20, 27 – паратипы (ZISP, ARA_ARA_0001082), 21, 25, 28 – паратипы (MMUE, G7734.1); 22–24, 26 – *A. fabrilis*: 22, 24 – самка (MMUE, G7502.425), 23 – самец (MMUE, G7512.2141), 26 – самец (ISEA, 001.9087). 15–16 – бульбус: 15 – снизу, 16 – сбоку – сзади; 17 – медиальный апофиз, апикально; 18 – эпигина, снизу; 19–20 – вульва, сверху; 21–22 – карапакс самки, спереди; 23 – пальпа самца, сбоку – сзади; 24–25 – лапка I и предлапка I самки, снизу; 26 – эмболярный отдел, апикально (фотография Г.Н. Азаркиной); 27 – хелицеры самки, снизу; 28 – габитус самки, сбоку. Масштабные линейки: 28 – 1 мм; 21–25, 27 – 0.5 мм; 15–16, 19–20 – 0.25 мм; 17–18, 26 – 0.1 мм.

Table 2. Variation in body parameters of paratypes of *Alopecosa talgarensis* **sp. n.** Average $\pm$ SE, range in parentheses.
Таблица 2. Вариация параметров тела паратипов *Alopecosa talgarensis* **sp. n.** Среднее значение $\pm$ SE, диапазон в скобках.

Parameter Параметр	Males / Самцы (<i>n</i> = 10)			Females / Самки (<i>n</i> = 10)		
	long длина	wide ширина	ratio соотношение	long длина	wide ширина	ratio соотношение
Carapace Карапакс	4.2 $\pm$ 0.06 (3.8–4.5)	2.9 $\pm$ 0.07 (2.6–3.2)	1.5 $\pm$ 0.02 (1.4–1.6)	4.6 $\pm$ 0.1 (4.3–5.3)	3.4 $\pm$ 0.11 (3–4)	1.4 $\pm$ 0.04 (1.1–1.5)
Abdomen Брюшко	3.5 $\pm$ 0.15 (2.7–4.4)	2.6 $\pm$ 0.07 (2.3–3)		4.6 $\pm$ 0.24 (3.7–5.8)	3 $\pm$ 0.13 (2.4–3.6)	
Chelicera Хелицера	1.6 $\pm$ 0.03 (1.5–1.8)			2 $\pm$ 0.05 (1.9–2.3)		
Clypeus Клипеус	0.17 $\pm$ 0.006 (0.14–0.2)			0.21 $\pm$ 0.007 (0.16–0.24)		

for females are given in Tables 1–3. Spination of leg I (*n* = 10): Fm d 1-1-1, pl 0-0-1, rl 1-1-1(all small) or 0-0-1small; Tb pl 1-1, v 2-2-2ap; Mt pl 0-1-1ap, v 2-2-3ap. Colouration (in alcohol; Figs 12, 13) as in the male, but abdomen darker, with clear brownish tint and much better pronounced cardiac mark. Palps yellow-brown. Epigyne and vulva as in Figs 7, 8, 18–20: epigyne flat; median septum strip-shaped, with curving lateral sides; epigynal hoods absent; copulatory openings situated at the proximal end of median septum, separated by a distance 3.5 times greater than their diameter; primary receptacles round or elongated; secondary receptacles ovoid, 1.5 times as wide or as ducts connecting them to primary receptacles; fertilisation ducts prominent, directed latero-distad.

Distribution. Two close localities in south-eastern Kazakhstan (Fig. 14), which lie in the Zaili botanical-geographic subprovince of the Dzungar-North Tien Shan province (sensu Akzhigitova et al. [2003]), where subalpine meadows and elfin woods predominate.

Etymology. The specific epithet is an adjective deriving from the name of Talgar District, from where the type series was collected.

Discussion

The newly described *Alopecosa* species differs from the genotype *A. fabrilis* and related species (Figs 22–24, 26; also figs 1, 2 in Lugetti, Tongiorgi [1969] and a set of

comparative figures in Nentwig et al. [2026]) in several important traits: viz., the obtuse hook-shaped embolic tip (Figs 5, 6; vs. stiletto-shaped), with a very unusual, slit-shaped pore (Fig. 6), and the absence of epigynal hoods (Figs 7, 18; vs. present). Although the genus *Alopecosa* is most likely paraphyletic, *A. talgarensis* **sp. n.** has been assigned to it based on the following considerations (cf. Dondale, Redner [1990]): medium body size; light median stripe on dorsum and cardiac mark present (Figs 10, 12), both are diagnostic colour characters of many *Alopecosa* species (see Nentwig et al. [2026]); femur I with a prolateral spine (see above under ‘Description’); cymbium 1.6–1.7 times longer than palpal tibia (Figs 9, 23); cymbial tip with no apical spine or cluster of rigid and straight bristles (Fig. 9); retromargin with two teeth (Fig. 27) as in the majority of *Alopecosa* species known to date; the shape of carapace with prominent thoracic declivity (Fig. 28) as in other *Alopecosa* species; general conformation of male palp (tegulum shape, position of subtegulum at 5 o’clock, etc.) are typical of *Alopecosa* species (Figs 1–6); and palea with cone-shaped synembolus as in the genotype and related species (cf. Figs 4, 5 and 26). Besides, the eye arrangement in *A. talgarensis* **sp. n.** and *A. fabrilis* are practically identical (Figs 21, 22): e.g., SER–AER ratio 1.25 vs. 1.2, AME – clypeus ratio 0.7 vs. 0.9, correspondingly. Tarsi I in both species have standard scopulae, with no spicules (Figs 24, 25).

Finally, the new species was collected at the elevations of 2300–2700 m a.s.l., which seems to be among the highest known records for *Alopecosa* species. For instance, in the Caucasus (North Ossetia), only *A. pulverulenta* (Clerck, 1757) is known to also occur in the subalpine zone, up to 2700 m a.s.l. [Bakanov, Ponomarev, 2020], but can be found even higher, in the alpine zone, up to 3000 m a.s.l. (A. Ponomarev, personal communication).

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Table 3. Variation in eye sizes and interdistances of paratypes of *Alopecosa talgarensis* **sp. n.** Average $\pm$ SE, range in parentheses.

Таблица 3. Различия в размерах глаз и межглазных расстояниях у паратипов *Alopecosa talgarensis* **sp. n.** Среднее значение $\pm$ SE, диапазон в скобках.

Parameter Параметр	Males / Самцы (<i>n</i> = 10)	Females / Самки (<i>n</i> = 10)
AER	0.7 $\pm$ 0.01 (0.7–0.8)	0.8 $\pm$ 0.01 (0.8–0.9)
SER	0.8 $\pm$ 0.02 (0.7–0.9)	1 $\pm$ 0.02 (0.9–1.1)
TER	1.1 $\pm$ 0.01 (1.1–1.2)	1.3 $\pm$ 0.02 (1.2–1.4)
AME	0.14 $\pm$ 0.004 (0.12–0.16)	0.15 $\pm$ 0.005 (0.12–0.18)
ALE	0.1 $\pm$ 0.003 (0.1–0.12)	0.12 $\pm$ 0.004 (0.1–0.14)
PME	0.32 $\pm$ 0.007 (0.28–0.36)	0.35 $\pm$ 0.004 (0.34–0.38)
PLE	0.21 $\pm$ 0.007 (0.18–0.25)	0.22 $\pm$ 0.008 (0.18–0.28)
AME–AME	0.08 $\pm$ 0.003 (0.08–0.1)	0.1 $\pm$ 0.005 (0.08–0.12)
AME–ALE	0.06 $\pm$ 0.003 (0.04–0.07)	0.08 $\pm$ 0.003 (0.07–0.1)
PME–PME	0.25 $\pm$ 0.006 (0.22–0.28)	0.32 $\pm$ 0.007 (0.28–0.36)
PLE–PLE	0.74 $\pm$ 0.011 (0.68–0.78)	0.84 $\pm$ 0.018 (0.78–0.95)

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