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A NEW SPECIES OF *ALOPECOSA* SIMON (ARANEAE, LYCOSIDAE) FROM SAKHALIN ISLAND

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Abstract *Alopecosa mikhailovi* sp. nov. is described from Sakhalin Island, Russia, on the basis of two males. The new species seems to be related to the *solivaga* species group.

Key words Lycosidae, Russia, Far East, new species, Sakhalin Island.

1 Introduction

Alopecosa Simon, 1885 is a fairly large genus of wolf spiders with 160 species (Platnick, 2012; Kovblyuk *et al.*, 2012). Although there are species described in *Alopecosa* from all continents, it seems that the genus is restricted only to the Holarctic. Only 12 species are known outside the Palaearctic and Nearctic, eight of which are restricted to the Neotropical region, two species are known from Africa and two from Australia (cf. Platnick, 2012). Given that 10 of these species are known only from their original descriptions, with the remaining two considered only in non-revisional studies (Simon, 1886; Schiapelli & Gerschman, 1974) it is not unreasonable to expect that all of them are misplaced in *Alopecosa*. The genus has its highest species diversity in Russia and adjacent countries. Eighty-two species of *Alopecosa* are known within the former Soviet Union (Mikhailov, 1997 & personal communication). Eighteen species of the genus have been reported from the Southern part of the Russian Far East (Mikhailov, 1997; Omelko & Marusik, 2008), with only three species known to occur on the Sakhalin Island: *Alopecosa aculeata* (Clerck, 1757), *A. cuneata* (Clerck, 1757) and *A. pulverulenta* (Clerck, 1757) (Marusik *et al.*, 1993; Mikhailov, 1997). While studying a small spider collection from Central Sakhalin we found two male specimens that could not be placed in any species known from Far East Russia, Japan, Korea or North-eastern China. These two males have an unusual dark brown coloration of the ventral part of the abdomen and a unique conformation of the male palp. Here, they are described as a new species of *Alopecosa*.

2 Material and Methods

Specimens were photographed using an Olympus Camedia E-520 camera attached to an Olympus SZX16 stereomicroscope at the Zoological Museum, University of Turku. Scanning electron microscopy with a JEOL 5200 was used for micrographs of male palps, digitized with SemAfore software. Digital images were montaged using "CombineZP" image stacking software. Photographs were taken in paraffin based dishes. Terminology of the copulatory organs follows Zyuzin (1993). All measurements are in mm. All material listed in the paper will be deposited in the Zoological Museum of the Moscow State University (ZMMU).

3 *Alopecosa mikhailovi* sp. nov. (Figs 1 - 16)

Holotype ♂ and paratype 1 ♂ (ZMMU) from Russia, Sakhalin Island, Tym'River, Nabil', Lunski Bay, 27 Aug. - 13 Sep. 1999 (M. Skopets).

Etymology. The specific epithet is a patronym in honor of our friend and colleague, the well-known Russian Arachnologist Kirill Mikhailov.

Diagnosis. By the shape of the male palp *A. mikhailovi* sp. nov. resembles species of the *Alopecosa solivaga*-group occurring in the East Palaearctic. The new species, like members of *solivaga*-group, has a downwards-turned tip of the median apophysis. The new species can be easily distinguished from other *Alopecosa* occurring on Sakhalin Island by the dark coloration of the underside of the abdomen. *Alopecosa mikhailovi* sp. nov. differs from species of the *solivaga*-group by having a strong ridge on the ventral side of the tegular apophysis (ridge absent in the *solivaga*-

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Figs 1 – 2. Holotype male of *Alopecosa mikhailovi* sp. nov. 1. Dorsal view. 2. Ventral view. Scale bars = 2 mm.

group). In addition, the new species lacks strong setae near the base of cymbium on the retrolateral side. The pattern of *A. mikhailovi* sp. nov. is rather similar to those seen in *A. kaplanovi* Oliger, 1983 and *A. tanakai* Omelko & Marusik, 2008 (cf. Figs 23 – 28 in Omelko & Marusik, 2008). The new species differs from similar species by its brown ventral coloration (black in *A. kaplanovi* and *A. tanakai*).

Description. Total length (paratype) 11.10, carapace 5.40 long, 4.20 wide. Carapace dark brown with yellowish median and lateral bands and darker cephalic part. Carapace and its cephalic area especially covered by short white hairs (Fig. 1). Sternum dark brown. Legs light brown, femur somewhat darker than other segments, annulations absent (Figs 1 – 2).

Table 1. Leg spination.

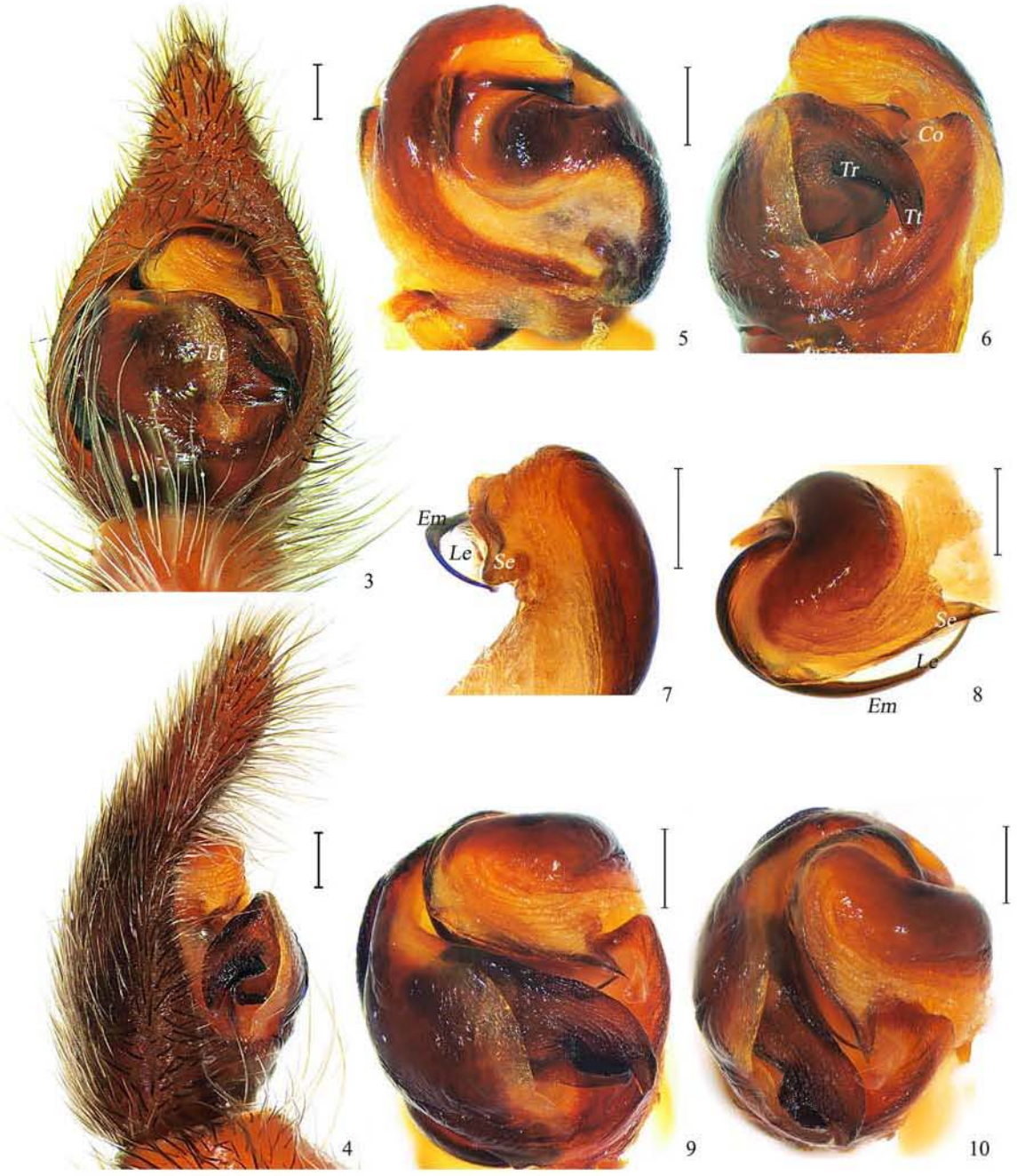
	Femur	Patella	Tibia	Metatarsus
I	3d, 1p, 3r	1p, 1r	2p, 2r, 2-2v	2p, 2r, 2-2v
II	3d, 2p, 3r	1p, 1r	2p, 2r, 2-2v	2p, 2r, 2-2v
III	3d, 2p, 3r	1p, 1r	2d, 2p, 2r, 2-2v	2p, 2r, 2-2v
IV	3d, 2p, 1r	1p, 1r	2d, 2p, 2r, 2-2v	2p, 2r, 2-2v

Table 2. Length of the legs and leg joints.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	4.55	1.90	3.80	3.95	2.55	16.75
II	4.25	2.00	3.45	3.70	2.35	15.75
III	4.00	1.95	3.30	3.80	2.20	15.25
IV	4.90	1.95	4.30	5.45	2.60	19.20

Abdomen brown with wide yellowish band (Fig. 1). Anterior part of light band with a pair of dark spots. Posterior part with three pairs of light strokes. Venter of abdomen dark brown (Fig. 2).

Palp as in Figs 3 – 16. Cymbium droplet-shaped, lacking claws or thick setae on the tip and near the



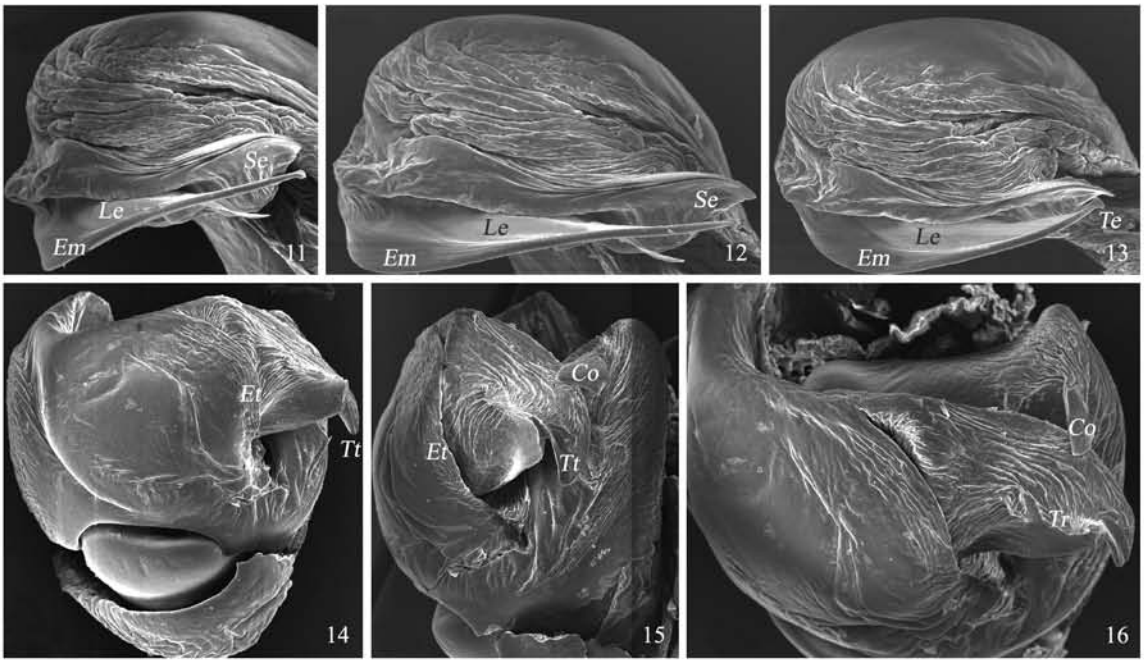
Figs 3 – 10. Male palp of *Alopecosa mikhailovi* sp. nov. 3 – 4. Whole palp, ventral and retrolateral. 5, 9 – 10. Bulbus, apical, ventral and from above, respectively. 6. Tegulum, ventro-retrolateral. 7 – 8. Embolic division, retrolateral and from above. Abbreviations: *Co.* Conductor; *Em.* Embolus; *Et.* Edge of tegulum; *Le.* Laminar extension; *Se.* Synembolus; *Tr.* Ridge of tegular apophysis; *Tt.* Tip of tegular apophysis. Scale bars = 0.2 mm.

base. Edge of tegulum (*Et*) almost vertical; tegular apophysis massive, heavily sclerotized, its tip (*Tt*) turned downwards, terminal half of tegular apophysis with strong ridge (*Tr*); conductor (*Co*) small, triangle-shaped; palea with well developed, long, triangle-shaped (in apical view) synembolus (*Se*); embolus (*Em*) long, with long almost invisible transparent laminar extension (*Le*) which terminates near the tip of the embolus, tip of embolus widened (*Te*).

Female. Unknown.

Distribution. Type locality only.

Comments. In the whole of Far East Asia, there is one species of *Alopecosa* known only from the female sex: *A. nemurensis* (Strand, 1907). It was described from Shiretoko Peninsula from Hokkaido and is known only from the female holotype. The holotype was treated in two publications (Strand, 1907, 1909) and has not been restudied since. Its description was absent in a recent survey of Japanese Lycosidae



Figs 11 – 16. SEM microphotographs of male palp of *Alopecosa mikhailovi* sp. nov. 11 – 13. Embolic division, subretrolateral, ventral and ventro-terminal view. 14 – 16. Tegulum, ventral, retrolateral and from above. Abbreviations: *Co.* Conductor; *Em.* Embolus; *Et.* Edge of tegulum; *Le.* Laminar extension; *Se.* Synembolus; *Te.* Tip of embolus; *Tr.* Ridge of tegular apophysis; *Tt.* Tip of tegular apophysis.

(Tanaka, 2009). Judging from the original description this species is similar to *A. pulverulenta*. It is smaller than males of our new species and lacks the dark ventral coloration. Therefore we believe that the new species described here is not conspecific with Strand's species.

4 Discussion

The taxonomy and limits of *Alopecosa* have not been studied on a broad scale. There have been only a few regional revisions, e. g. for Europe (Lugetti & Tongiorgi, 1969), the Nearctic (Dondale & Redner, 1979), China (Yin *et al.*, 1997) and Japan (Tanaka, 2009). Only a few species of *Alopecosa* have been properly illustrated, e. g. the embolic division (palea, synembolus and embolus), which is rather important for differentiation of supraspecific taxa, has been shown only for Northern European members of the *pulverulenta*-group (Kronestedt, 1990), for the 11 species occurring in Sweden (Almquist, 2005), three species from Southeastern Europe (Nadolny & Koblyuk, 2010; Nadolny *et al.*, 2012) and for two Far Eastern species, *A. kaplanovi* and *A. tanakai* (Omelko & Marusik, 2007). Judging from the copulatory organs most of the species considered in the genus are rather distantly related to the generotype, *A. fabrilis* (Clerck, 1757), and deserve placing in separate genera. Species groups have been established only for European species (Lugetti & Tongiorgi, 1969) and some East Palaearctic species (cf. Marusik *et al.*, 2000). We cannot place the new species in any known species group or trace its relationships to any described species. The embolic division of *A. mikhailovi* sp. nov. is rather similar to that in *A. kovblyuki* Nadolny *et al.*, 2012 in having a well developed triangular synembolus and the embolus accompanied with a laminar extension along its entire length. Nonetheless, the two species have very different tegular apophyses.

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萨哈林岛舞蛛属一新种记述

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摘 要 记述了采自萨哈林岛1新种，*Alopecosa mikhailovi* sp. nov., 2♂♂，新种与 *solivaga* 种团近似。

关键词 狼蛛科，俄罗斯，远东，新种，萨哈林岛.

中图分类号 Q959. 226