

## New data on spiders (Aranei) from Eastern Koryakia, Kamchatka Peninsula

### Новые данные о пауках (Aranei) восточной Корякии, Камчатка

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КЛЮЧЕВЫЕ СЛОВА. Северо-Восток Азии, Дальний Восток, новая находка, Камчатский край.

**ABSTRACT.** Eighty-four species of spiders and one species of harvestman are reported from Eastern Koryakia. 37 species and one family, Agelenidae, are new to Koryakia. Of these, 25 species and seven genera are new to the entire Kamchatka Peninsula. Seven species are illustrated. A list of all species reported from Koryakia is presented and most interesting finds are discussed.

**РЕЗЮМЕ.** В восточной Корякии, в окрестностях посёлков Тилички и Ачайваям отмечено 84 вида пауков и один вид сенокосца. Из них 37 видов и одно семейство (Agelenidae) найдены в Корякии впервые. Среди найденных пауков, 25 видов и 7 родов впервые зарегистрированы на Камчатке. Для 7 видов приводятся диагностические иллюстрации. Приводятся список всех видов, известных в Корякии (148), все интересные находки прокомментированы.

### Introduction

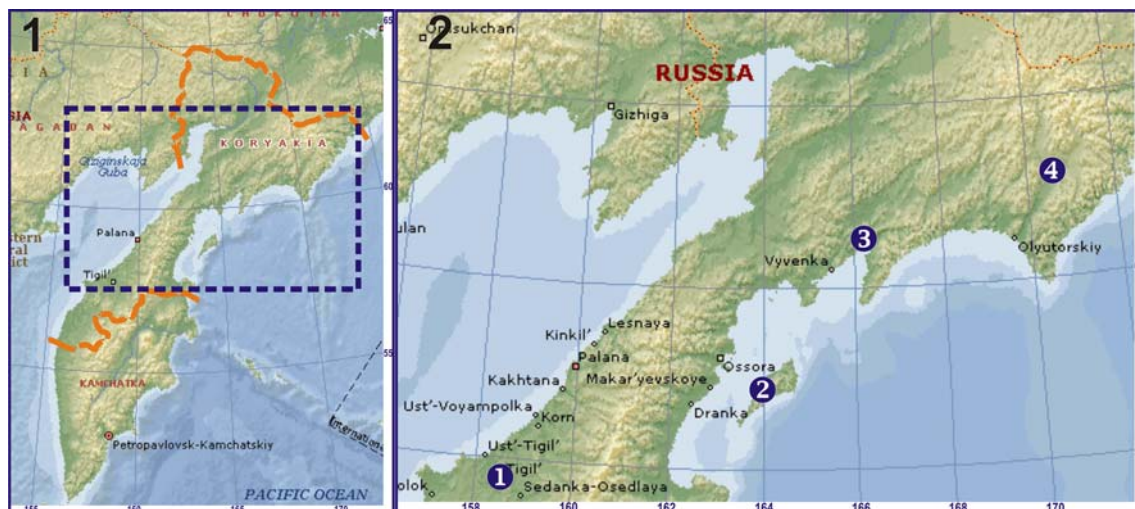
Kamchatka Peninsula with 240 reported spider species [Mikhailov, 2013] is one of the worst studied region of Russia in respect to its spider fauna. Only a small in space island regions such as Novaya Zemlya, the Commander Island, Middle and North Kuril islands have fewer species. Until recently, only south part of Kamchatka was more or less studied, while northern part, or Koryakia, was almost uninvestigated. First six species from northwestern Koryakia were reported by Marusik et al. [1992]. This number did not change until 2010, when 83 morphospecies were reported from western Koryakia on the basis of material collected by the third author [Marusik et al., 2010]. Since then, one

more paper was published about spiders of the eastern Koryakia, Karaginski Island [Marusik & Khrulyova, 2011]. Besides these three faunistic papers, few species from Koryakia were considered in some taxonomic publications [Marusik & Koponen, 2010; Omelko et al., 2010]. Up to now, 117 species of spiders and one species of harvestmen are known to occur in Koryakia [Marusik & Khrulyova, 2011], but only 105 of them are identified to species level.

Recently, the third author visited two localities in eastern Koryakia and collected there some hundreds specimens of spiders. New material contained over three dozen species and a few genera new for Koryakia and Kamchatka. Goal of this paper is to provide: 1) first data about two local faunas in Eastern Koryakia; 2) to provide comments on new species records for Koryakia and Kamchatka; and, 3) to sum up data about species diversity of spiders in Koryakia.

### Material and methods

All spiders were collected by the third author in Olyutorski District in Eastern Koryakia: environs of Tilichiki Village (60°26'N 166°03'E) in July 3–26, 2012, and in environs of Achayvayam Village (61°00' 11"N 170°30'19"E) in July 6–28, 2013 (Map 1). The material was collected either by sifting litter or hand picking in lowland habitats. Spiders were preserved in 75% ethanol. Material treated here will be shared between the Zoological Museum of the Moscow State University and the Manchester Museum, University of Manchester, UK. The numbers of examined specimen from the two localities are presented in Table 1 in appropriate columns. For all species new to Kamchatka and Koryakia we provide comments. Specimens



Maps 1–2. 1 — Kamchatka peninsula and boundaries of Koryakia; 2 — collecting localities in Koryakia: 1 — Tigil' [Marusik et al., 2010]; 2 — Karaginski Isl. [Marusik & Khrulyova, 2011]; 3 — Tilichiki Village; 4 — Achayvayam Village.

Карты 1–2. 1 — п-ов Камчатка и границы Карякии; 2 — точки сборов в Карякии: 1 — Тигиль [Marusik et al., 2010]; 2 — о-в Карагинский [Marusik & Khrulyova, 2011]; 3 — Тиличики; 4 — Ачайваям.

unidentified to species level are not listed with few exceptions. Seven poorly known species are illustrated. Families, genera and species are listed in alphabetic order. Species marked with asterisk (\*) are completely new to Kamchatka, and species marked with ^ are new to Koryakia. Species for which Koryakia is the easternmost or westernmost locality in the range are marked with <sup>E</sup> and <sup>W</sup> correspondingly.

Specimens were photographed using an Olympus Camedia E-520 camera attached to an Olympus SZX16 stereomicroscope and the SEM JEOL JSM-5200 scanning microscope at the Zoological Museum, University of Turku. The images taken by the Olympus Camedia were montaged using "CombineZP" image stacking software. Photographs were taken in dishes of different size with paraffin at the bottom. Different sized holes were made in the bottom to keep the specimens in the correct position.

### Survey of interesting finds

#### AGELENIDAE

COMMENTS. This family is new to Koryakia. Only one species of the family is known from Kamchatka.

*Tegenaria domestica* (Clerck, 1758) ^

COMMENTS. Singleton male was collected inside a building. The species has a Cosmopolitan range [Platnick, 2013], and in most localities is synanthropic.

#### ARANEIDAE

*Cercidia prominens* (Westring, 1851) ^

COMMENTS. The species distributed across the Holarctic [Platnick, 2013]. Although only one juvenile specimen was collected, we have no doubt about it

being identified correctly due to its specific pattern, and because it is the only species of the genus known north of 50°N.

#### CLUBIONIDAE

*Clubiona furcata* Emerton, 1919\*  
Figs 1–5.

COMMENTS. The species is known across the northern Nearctic, and in northeastern Asia [Mikhailov & Marusik, 1995]. Within Asia it was reported from the Magadan Area only. The species can be easily recognized thanks to "wart" (*Wa*) on the base of embolus (Fig. 3).

#### DICTYNIDAE

*Arctella lapponica* Holm, 1945\*

COMMENTS. The species is known from northern Fennoscandia to northeastern part of Northeastern Territories [Marusik et al., 2000]. Although it is rather common in adjacent Chukotka and Magadan Area, the genus and species were never found in Kamchatka Peninsula before. Although we have on hand only two juveniles it was easy to identify species and genus. *Arctella lapponica* is a single species of the genus occurring in the North. It lacks any pattern and has a large and more elongate body in comparison to *Hackmania prominula* (Tullgren, 1948), a northern species lacking pattern.

#### LINYPHIIDAE

*Agyneta amersaxatilis* Saaristo et Koponen, 1998\*<sup>W</sup>

COMMENTS. The species is considered as a senior synonym of *A. yakutsaxatilis* Marusik & Koponen,

Table 1. List of spiders and harvestmen found in Koryakia in four localities: (1) Tigil' Village [after Marusik et al., 2010], (2) Karaginski Island [after Marusik & Khrulyova, 2011], (3) Tilichiki Village and (4) Achayavayam Village (present data).

Табл. 1. Список видов пауков и сенокосцев найденных в 4 локалитетах: (1) Тигиль [по Marusik et al., 2010], (2) о-в Карагинский [по Marusik & Khrulyova, 2011], (3) Тиличики и (4) Ачайваям (новые данные).

	1	2	3	4
<b>ARANEI</b>				
<b>Agelenidae</b>				
<i>Tegenaria domestica</i> (Clerck, 1758)			1♂	
<b>Araneidae</b>				
<i>Araneus alsine</i> (Walckenaer, 1802)	+			
<i>Araneus marmoreus</i> Clerck, 1758	+			
<i>Araneus nordmanni</i> (Thorell, 1870)	+			
<i>Araneus yukon</i> Levi, 1971	+	+		
<i>Araniella proxima</i> (Kulczyński, 1885)		+		
<i>Cercidia prominens</i> (Westring, 1851)				1♀
<i>Larinioides cornutus</i> (Clerck, 1758)		+		
<i>Parazygiella dispar</i> (Kulczyński, 1885)	+			
<b>Clubionidae</b>				
<i>Clubiona furcata</i> Emerton, 1919				4♂♂
<i>Clubiona kulczynskii</i> Lessert, 1905	+			
<i>Clubiona latericia</i> Kulczyński, 1926	+			
<b>Dictynidae</b>				
<i>Arctella lapponica</i> Holm, 1945			2j	
<i>Hackmania prominula</i> (Tullgren, 1948)		+		
<b>Gnaphosidae</b>				
<i>Gnaphosa microps</i> Holm, 1939		+		
<i>Haplodrassus moderatus</i> (Kulczyński, 1897)		+		
<i>Haplodrassus soerenseni</i> (Strand, 1900)		+		
<i>Micaria pulicaria</i> (Sundevall, 1831)		+		
<b>Hahniidae</b>				
<i>Hahnia ononidum</i> Simon, 1875		+		
<b>Linyphiidae</b>				
<i>Agnyphantes expunctus</i> (O.P.-Cambridge, 1875)		+		
<i>Ayneta amersaxatilis</i> Saaristo et Koponen, 1998				2♂♀
<i>Agyneta mollis</i> (O.P.-Cambridge, 1871)	+			
<i>Agyneta olivacea</i> (Emerton, 1882)				1♀
<i>Agyneta pseudosaxatilis</i> Tanasevitch, 1984			1♀	
<i>Allomengea scopigera</i> (Grube, 1859)	+			
<i>Anguliphantes dybowskii</i> (O. P.-Cambridge, 1873)				4♀♀
<i>Anguliphantes karpinskii</i> (O.P.-Cambridge, 1873)	+			
<i>Aphileta misera</i> (O.P.-Cambridge, 1882)	+			
<i>Asperthorax borealis</i> Ono et Saito, 2001	+			
<i>Bathyphantes eumenis</i> (L.Koch, 1879)	+	+	1♂	4♀♀
<i>Bathyphantes gracilis</i> (Blackwall, 1841)	+			
<i>Bathyphantes humilis</i> (L.Koch, 1879)		+		
<i>Bathyphantes pogonias</i> Kulczyński, 1885	+	+		2♀♀
<i>Bathyphantes setiger</i> F.O. P.-Cambridge, 1894				4♂♂3♀♀
<i>Centromerus sylvaticus</i> (Blackwall, 1841)	+			

Table 1 (contituing)  
Таблица 1 (продолжение)

<i>Ceraticelus bulbosus</i> (Emerton, 1882)	+		1♂	
<i>Ceraticelus orientalis</i> Eskov, 1987				1♀
<i>Ceratinella wideri</i> (Thorell, 1871)				1♂
<i>Cnephalocotes obscurus</i> (Blackwall, 1834)				1♀
<i>Concavocephalus rubens</i> Eskov, 1989				1♂10♀♀
<i>Dactylopisthes video</i> (Chamberlin et Ivie, 1947)		+		
<i>Dicymbium libidinosum</i> (Kulczyński, 1926)	+	+		3♀♀
<i>Diplocentria bidentata</i> (Emerton, 1882)	+	+	3♂♂6♀♀	3♂♂21♀♀
<i>Dismodicus bifrons</i> (Blackwall, 1841)		+		9♀♀
<i>Erigone atra</i> Blackwall, 1833	+			1♂
<i>Erigone cristatopalpus</i> Simon, 1884		+		
<i>Estrandia grandaeva</i> (Keyserling, 1886)	+	+		
<i>Flagelliphantes flagellifer</i> (Tanasevitch, 1987)	+			
<i>Gnathonarium taczanowskii</i> (O.P.-Cambridge, 1873)	+			1♀
<i>Gonatium rubens</i> (Blackwall, 1833)				1♀
<i>Halorates holmgreni</i> (Thorell, 1872)				1♂6♀♀
<i>Hilaira canaliculata</i> (Emerton, 1915)	+		1♂	4♀♀
<i>Hilaira devitata</i> Eskov, 1987	+			
<i>Hilaira herniosa</i> (Thorell, 1875)	+	+	2♀♀	2♀♀
<i>Hilaira minuta</i> Eskov, 1979			1♀	2♀♀
<i>Hilaira pervicax</i> Hull, 1908			2♀♀	12♀♀
<i>Hilaira sibirica</i> Eskov, 1987	+		4♀♀	20♀♀
<i>Horcotes strandi</i> (Sytshevskaja, 1935)		+		4♂♂1♀
<i>Hybauchenidium gibbosum</i> (Sorensen, 1898)	+	+		1♂3♀♀
<i>Hylyphantes graminicola</i> (Sundevall, 1830)	+			
<i>Hypselistes semiflavus</i> (L.Koch, 1879)	+			
<i>Improphantes complicatus</i> (Emerton, 1882)	+		2♀♀	15♀♀
<i>Islandiana cristata</i> Eskov, 1987				1♂5♀♀
<i>Kaestneria anceps</i> (Kulczyński, 1885)	+	+	1♀	7♂♂17♀♀
<i>Lepthyphantes luteipes</i> (L.Koch, 1879)		+		
<i>Lophomma vaccinii</i> (Emerton, 1926)	+			
<i>Macrargus multesimus</i> (O.P.-Cambridge, 1875)		+		
<i>Maro sibiricus</i> Eskov, 1980			1♀	
<i>Maso sundevalli</i> (Westring, 1851)	+			4♂♂8♀♀
<i>Mecynargus sphagnicola</i> Eskov, 1988			1♂	
<i>Micrargus herbigradus</i> (Blackwall, 1854)	+			
<i>Microlinyphia pusilla</i> (Sundevall, 1830)	+	+		
<i>Minyrioloides affinis</i> Schenkel, 1930	+	+		
<i>Mughiphantes taczanowskii</i> (O.P.-Cambridge, 1873)	+		1♀	
<i>Neriere subarctica</i> Marusik, 1991 ?			1♀	1♀1j
<i>Obscuriphantes pseudoobscurus</i> Marusik et al., 1996			1♂	
<i>Oedothorax trilobatus</i> (Banks, 1896)	+			
<i>Oreoneta magaputo</i> Saaristo et Marusik, 2004		+	2♀♀	2♂♂19♀♀
<i>Oreonetides kolymensis</i> Eskov, 1991			1♀1(♂)	
<i>Oreonetides vaginatus</i> (Thorell, 1872)	+	+		1♂4♀♀
<i>Oryphantes bipilis</i> (Kulczyński, 1885)	+	+	1♀	3♀♀
<i>Paratmeticus bipunctis</i> (Bösenberg et Strand, 1906)	+			
<i>Parawubanoides unicornis</i> (O.P.-Cambridge, 1873)				1♂2♀♀

Table 1 (contituing)  
Таблица 1 (продолжение)

<i>Pelecopsis dorniana</i> Heimer, 1987				3♂♂3♀♀
<i>Pelecopsis mengei</i> (Simon, 1884)		+		1♂♂3♀♀
<i>Pelecopsis parallela</i> (Wider, 1834)	+			
<i>Perregrinus deformis</i> (Tanasevitch, 1982)	+		2♂♂	1♂♂10♀♀
<i>Phlathothrata parva</i> (Kulczyński, 1926)	+	+	2♀♀	4♂♂4♀♀
<i>Poeciloneta variegata</i> (Blackwall, 1841)			1j	
<i>Porrhomma montanum</i> Jackson, 1913	+	+		
<i>Praestigia kulczynskii</i> Eskov, 1979	+	+	?2♀♀	1♀
<i>Pseudocyba miracula</i> Tanasevitch, 1984				2♀♀
<i>Savignia birostra</i> (Chamberlin et Ivie, 1947)		+		1♂♂7♀♀
<i>Sciastes dubius</i> (Hackman, 1954)	+			4♀♀
<i>Scotynotylus</i> cf. <i>millidgei</i> Eskov, 1989				1♀
<i>Semljicola beringianus</i> (Eskov, 1989)				5♀♀
<i>Semljicola convexus</i> (Holm, 1963)				3♂♂♂19♀♀
<i>Semljicola lapponicus</i> (Holm, 1939)	+			1♀
<i>Stemonyphantes sibiricus</i> (Grube, 1861)	+	+		1j
<i>Styloctetor lehtineni</i> Marusik et Tanasevitch, 1998		+		1♀
<i>Tenuiphantes alacris</i> (Blackwall, 1853)	+			
<i>Tenuiphantes mengei</i> (Kulczyński, 1887)	+	+		
<i>Tenuiphantes nigriventris</i> (L.Koch, 1879)	+			
<i>Thaleria alnetorum</i> Eskov et Marusik, 1992				2♂♂♂1♀
<i>Thaleria sukatchevae</i> Eskov et Marusik, 1992				1♂♂26♀♀
<i>Theonina aterrima</i> Eskov et Marusik, 1991				1♀
<i>Tibioploides pacificus</i> Eskov et Marusik, 1991	+			
<i>Tibioplus diversus</i> (L.Koch, 1879)	+			
<i>Tmeticus tolli</i> Kulczyński, 1908		+		2♂♂
<i>Tunagyna debilis</i> (Banks, 1892)	+			2♀♀
<i>Walckenaeria cuspidata</i> Blackwall, 1833	+	+	1♀	9♀♀
<i>Walckenaeria karpinskii</i> (O.P.-Cambridge, 1873)	+	+	1♀	
<i>Walckenaeria kochi</i> (O.P.-Cambridge, 1872)	+			
<i>Walckenaeria korobeinikovi</i> Eshyunin et Efimik, 1996	+			6♀♀
<i>Walckenaeria nudipalpis</i> (Westring, 1851)	+			
<i>Walckenaerianus aimakensis</i> Wunderlich, 1995	+			
<i>Wubanoidea fissus</i> (Kulczyński, 1926)		+		2♀♀
<i>Zornella orientalis</i> Marusik, Koponen et Buckle, 2007			1♀	
<b>Liocranidae</b>				
<i>Agroeca ornata</i> Banks, 1892	+			
<b>Lycosidae</b>				
<i>Alopecosa aculeata</i> (Clerck, 1758)		+		
<i>Pardosa atrata</i> (Thorell, 1873)		+		
<i>Pardosa palustris</i> (Linnaeus, 1758)		+	1j	2j
<i>Pardosa</i> cf. <i>prosaica</i> Chamberlin et Ivie, 1947		+		
<i>Pardosa riparia</i> (C.L. Koch, 1847)	+			
<i>Pardosa tesquorum</i> (Odenwall, 1901)	+			
<i>Piratula canadensis</i> (Dondale et Redner, 1981)	+			
<i>Tricca alpigena</i> (Doleschall, 1852)				2♀♀



Table 1 (contituing)  
Таблица 1 (продолжение)

<b>Philodromidae</b>				
<i>Tibellus maritimus</i> (Menge, 1875)	+	+	1♂	2♂♂
<b>Salticidae</b>				
<i>Heliophanus camtschadalicus</i> Kulczyński, 1885	+			1♀
<i>Sitticus caricis</i> (Westring, 1861)	+			
<i>Sitticus cutleri</i> Prószyński, 1980				1♀
<i>Sitticus floricola</i> (C.L. Koch, 1837)		+		1♂
<b>Tetragnathidae</b>				
<i>Pachygnatha clercki</i> Sundevall, 1823	+			
<i>Tetragnatha dearmata</i> Thorell, 1873				1j
<i>Tetragnatha extensa</i> (Linnaeus, 1758)	+	+		3j
<b>Theridiidae</b>				
<i>Canalidion montanum</i> (Emerton, 1882)	+			
<i>Enoplognatha caricis</i> (Fickert, 1876)	+			1j
<i>Robertus lividus</i> (Blackwall, 1836)	+			
<i>Robertus lyrifer</i> Holm, 1939	+		?1♀	3♂♂8♀♀
<i>Robertus unguatus</i> Vogelsanger, 1944	+			
<i>Rugathodes aurantius</i> (Emerton, 1915)	+			
<i>Thymoites bellissimus</i> (L. Koch, 1879)	+			
<b>Thomisidae</b>				
<i>Ozyptila gertschi</i> Kurata, 1944	+			
<i>Ozyptila orientalis</i> Kulczyński, 1926				2♂♂7♀♀
<i>Ozyptila trux</i> (Blackwall, 1846)		+	1♀2j	1♀3j
<i>Xysticus albidus</i> Grese, 1909				1j
<i>Xysticus britcheri</i> Gertsch, 1934	+	+	1♂	1♂
<b>Zoridae</b>				
<i>Zora</i> cf. <i>nemoralis</i> (Blackwall, 1861)	f			1♂
<b>OPILIONES, Phalangidae</b>				
<i>Mitopus morio</i> (Fabricius, 1779)	+	+	3j	7j

2002 [cf. Platnick, 2013], a species known from Taimyr to eastern Yakutia. Specimens from Koryakia correspond well with figures provided for *A. amersaxatilis*, but not to those of *A. yakutsaxatilis*. If it is agreed that two names are synonyms, then our record is first for Kamchatka and the easternmost record of the species in Palaearctic. If it is considered that the two names represent two separate species (as we do), then the record from Achayvayam Village is first for the whole Palaearctic and westernmost in the range.

*Agyneta olivacea* (Emerton, 1882)\*

COMMENTS. The species is widespread in the Holarctic [Platnick, 2013], but was never reported from Kamchatka.

*Agyneta pseudosaxatilis* Tanasevitch, 1984^

COMMENTS. The species has a Siberian range, and was previously reported from southern Kamchatka [Eskov, 1994].

*Anguliphantes dybowskii* (O. Pickard-Cambridge, 1873)\*<sup>E</sup>

Figs 6–12.

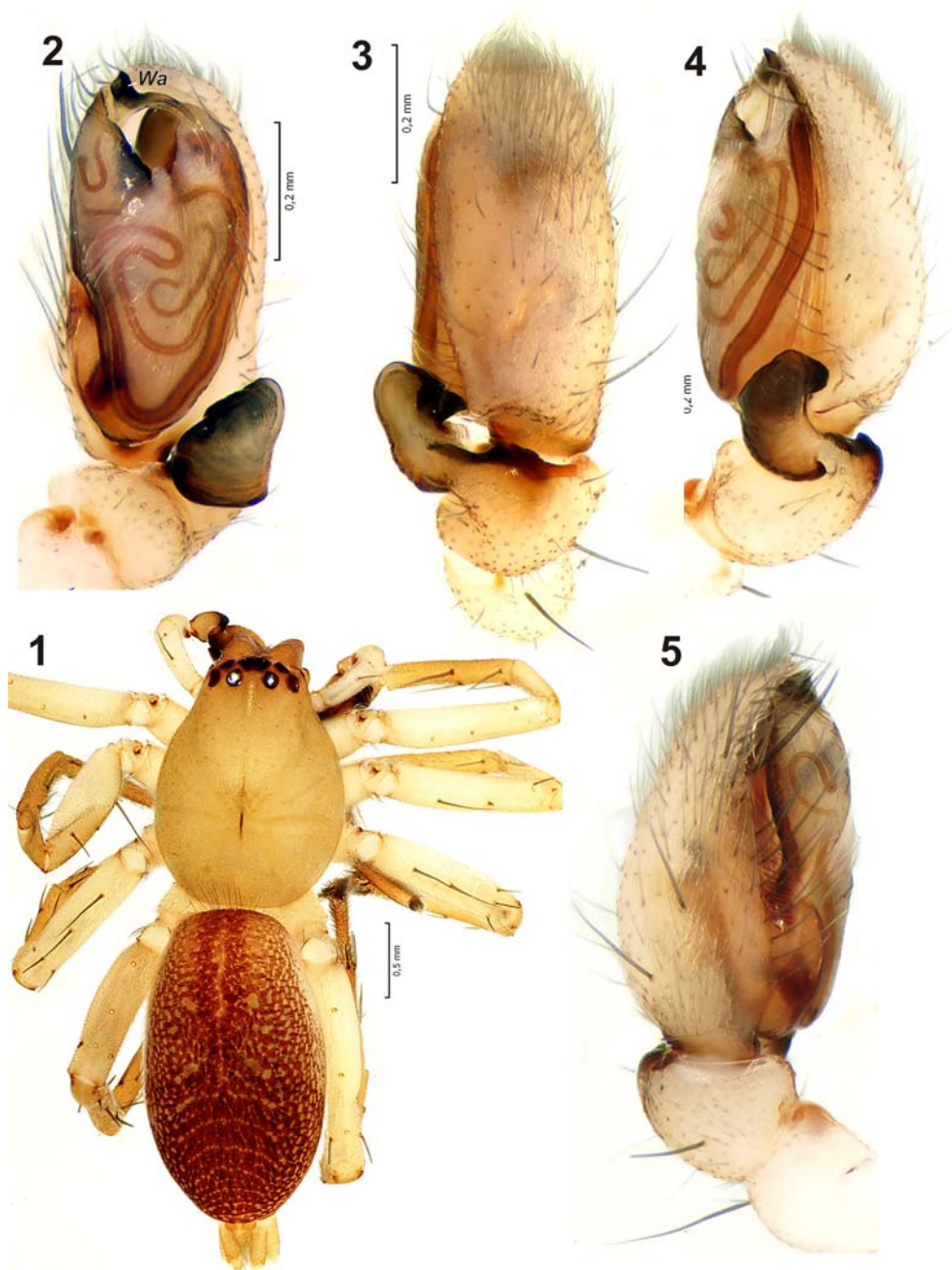
COMMENTS. The species has a Siberian range [Eskov, 1994], but it was never reported from the Kamchatka Peninsula. The present record is easternmost in the whole range. Here we provide figures of the copulatory organs of this species because they were not properly illustrated before.

*Bathyphantes setiger* F.O. Pickard-Cambridge, 1894\*

COMMENTS. Although the species has a trans-Palaearctic range [Platnick, 2013], and is known from Chukotka [Marusik et al., 1992], it was never reported from Kamchatka before.

*Ceraticelus orientalis* Eskov, 1987^

COMMENTS. The species is known from north-eastern Asia only [Eskov, 1994]. The record from Achayvayam is the most northeastern of the range.



Figs 1–5. Habitus (1) and palp (2–5) of *Clubiona furcata* male. 1, 3 — dorsal; 2 — ventral; 4 — retrolateral; 5 — prolateral. Abbreviation: *Wa* — “wart”.

Рис. 1–5. Габитус (1) и пальпа (2–5) самца *Clubiona furcata*. 1, 3 — сверху; 2 — снизу; 4 — ретролатерально; 5 — пролатерально.

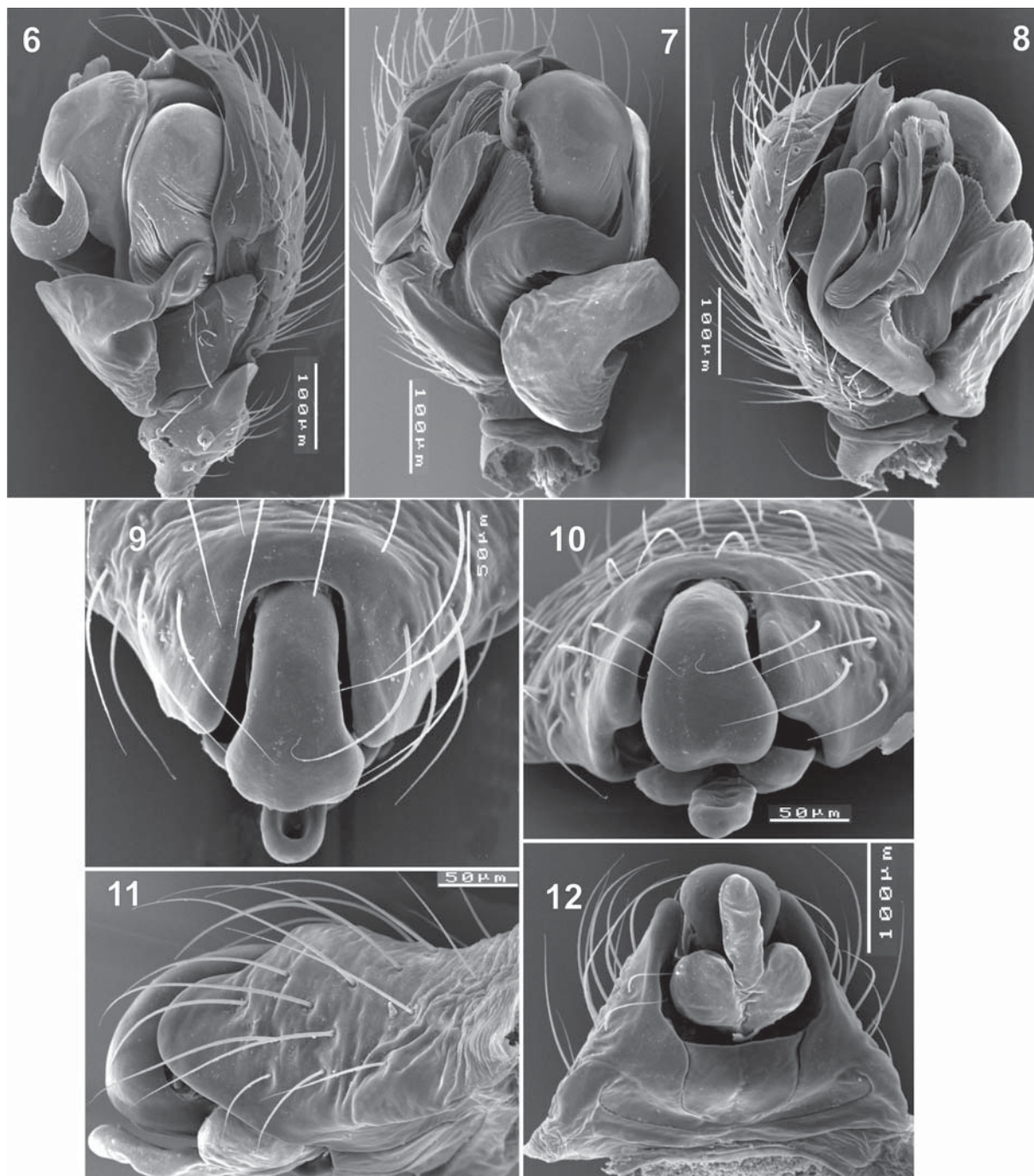
Сокращение: *Wa* — “бородавка”.

*Ceratinella wideri* (Thorell, 1871)\*<sup>E</sup>

COMMENTS. Although the species is known from Fennoscandia to Magadan Area, it was never found in Kamchatka [Mikhailov, 1997]. Present record is the most eastern of the range.

*Cnephalocotes obscurus* (Blackwall, 1834)<sup>AE</sup>

COMMENTS. The species has a trans-Palaearctic range [Platnick, 2013]. The record from Koryakia is the most eastern of the range.



Figs 6–12. Male palp (6–8) and epigyne (9–12) of *Anguliphantes dybowskii* from environs of Magadan. 6 — retrolateral; 7, 9 — ventral; 8 — prolateral; 10 — caudal; 11 — lateral, 12 — dorsal.

Рис. 6–12. Пальпа самца (6–8) и эпигина (9–12) *Anguliphantes dybowskii* из окрестностей Магадана. 6 — ретролатерально; 7, 9 — снизу; 8 — пролатерально; 10 — сзади; 11 — латерально, 12 — сверху.

*Concavocephalus rubens* Eskov, 1989\*<sup>E</sup>

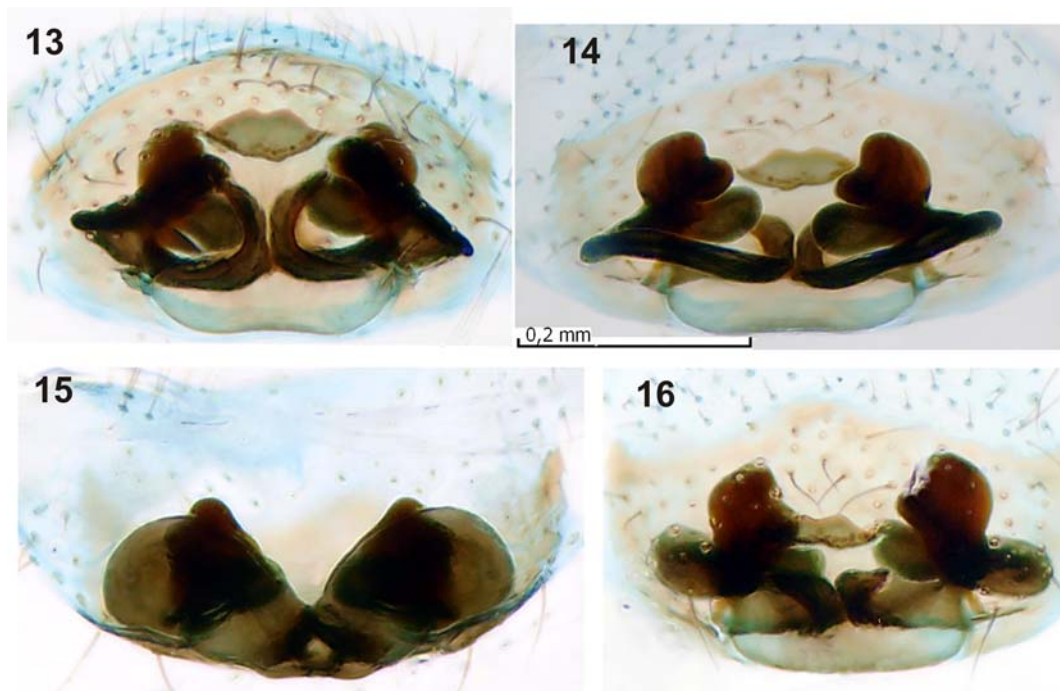
COMMENTS. The species was known from Yenisei to Kolyma River [Eskov, 1994]. The current record is the most eastern of the species and the genus.

*Dismodicus bifrons* (Blackwall, 1841)

Figs 13–16.

COMMENTS. This species was already reported from the Karaganski Island [Marusik & Khrulyova,





Figs 13–16. Epigyne of *Dismodicus bifrons* (after maceration). 13 — ventral; 14 — dorsal; 15 — caudal; 16 — anterio-ventral.  
Рис. 13–16. Эпигина *Dismodicus bifrons* (после мацерации). 13 — снизу; 14 — сверху; 15 — сзади; 16 — спереди-снизу.

2011], on the basis of a singleton female, as *D. alticeps* Chamberlin & Ivie, 1947. Comparison of the vulva of this specimen, and of specimens from Achayvayam Village with specimens from Finland, reveals no differences. Because vulva of this species was not properly illustrated before, here we provide figures of macerated epigyne and show the unusual basal plates.

*Gonatium rubens* (Blackwall, 1833)\*

COMMENTS. The species is known across whole Palaearctic [Platnick, 2013], but it was never reported from Kamchatka.

*Halorates holmgreni* (Thorell, 1872)^

COMMENTS. The species has a Holarctic range [Platnick, 2013], and most of its localities lie in the tundra zone [Marusik & Eskov, 2009].

*Hilaira minuta* Eskov, 1979\*

COMMENTS. The species is known from Yenisei River to Anadyr' River mouth [Eskov, 1994]. It was never reported from Kamchatka before.

*Hilaira pervicax* Hull, 1908\*<sup>E</sup>

COMMENTS. Earlier this species was known from Europe to Kolyma River [Mikhailov, 1997]. The record from Koryakia is the most eastern of the range.

*Islandiana cristata* Eskov, 1987^

COMMENTS. The species is distributed across Siberia, and also known from Alaska and the Yukon Territory in Canada [Eskov, 1994; Platnick, 2013].

*Maro sibiricus* Eskov, 1980<sup>^E</sup>

COMMENTS. The species is known in Siberia east of Yenisei to Kamchatka [Mikhailov, 1997]. The record from Koryakia is the most eastern in the range.

*Mecynargus sphagnicola* (Holm, 1939)\*

COMMENTS. Although the species is known from the Palaearctic and Greenland [Platnick, 2013], it was never found in Kamchatka before.

*Neriere cf. subarctica* Marusik, 1991\*

Figs 17–20.

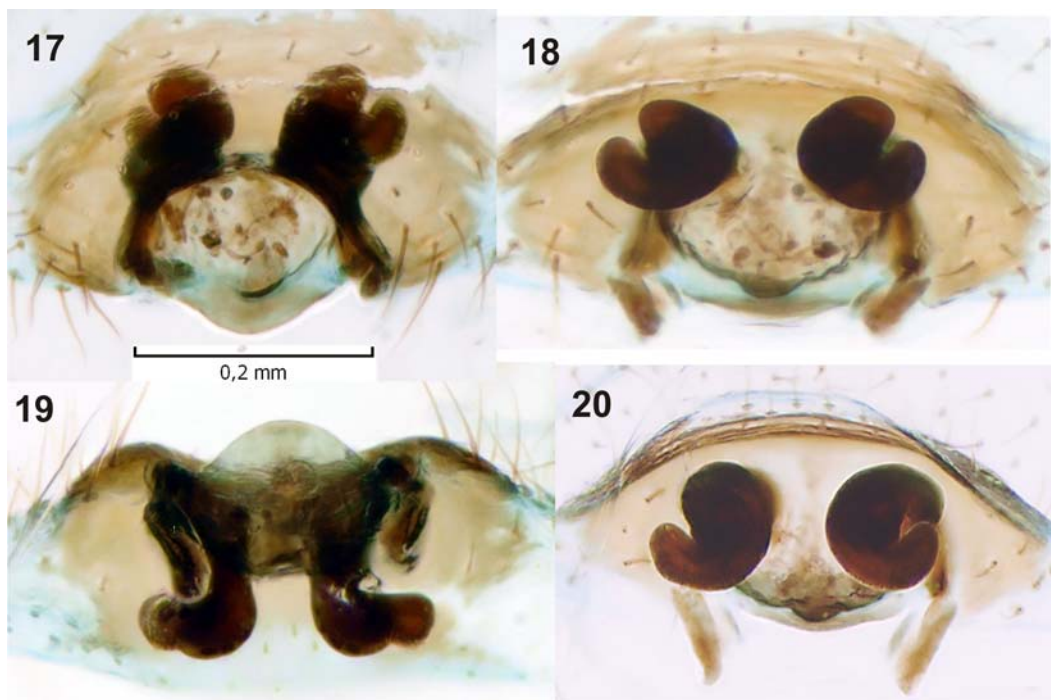
COMMENTS. *Neriere subarctica* is known by the original description only. It was found from eastern Yakutia and south part of Magadan Area. Although fovea of epigyne of Kamchatkan specimens are similar to specimens from Magadan Area, they lack plate covering fovea and have different spination. Most likely it is an undescribed species, but we refrain from its description until males are found.

*Obscuriphantes pseudoobscurus* Marusik, Hippa et Koponen, 1996^

COMMENTS. The species known across whole Siberia [Marusik et al., 2000].

*Oreonetides kolymensis* Eskov, 1991\*

COMMENTS. This species was known from northern Cisamuria to Chaun Bay in Chukotka [Eskov, 1994].



Figs 17–20. Epigyne of *Neriene subarctica* ? (after maceration). 17 — ventral; 18 — anterio-dorsal; 19 — caudal; 20 — anterior.  
Рис. 17–20. Эпигина *Neriene subarctica* ? (после мацерации). 17 — снизу; 18 — спереди-сверху; 19 — сзади; 20 — спереди.

*Parawubanoides unicornis* (O. Pickard-Cambridge, 1873)<sup>AE</sup>

COMMENTS. The species was known from Yenisei River to Kamchatka Peninsula [Eskov, 1994]. The record from Koryakia is the most eastern of the range.

*Pelecopsis dorniana* Heimer, 1987\*

COMMENTS. Although the species has a wide-spread Siberian range, and is known from Yenisei to eastern Chukotka [Eskov, 1994], it was never reported from Kamchatka.

*Poeciloneta variegata* (Blackwall, 1841)<sup>A</sup>

COMMENTS. The species is known from Palaearctic and western Nearctic [Marusik et al., 2000]. It was known previously in south Kamchatka.

*Pseudocyba miracula* Tanasevitch, 1984<sup>E</sup>

COMMENTS. The species and monotypic genus were known from Polar Ural to Kolyma River [Eskov, 1994]. The current record extends the genus and species range about 20° to the east.

*Scotinotylus* cf. *millidgei* Eskov, 1989\*

COMMENTS. We can not identify with certainty a single female found in Koryakia. We report this species because it belongs to this genus, which was previously unknown in Koryakia.

*Semljicola beringianus* (Eskov, 1989)<sup>\*W</sup>

COMMENTS. The species is known in Siberia east of 140°E [Saaristo & Eskov, 1996].

*Semljicola convexus* (Holm, 1963)<sup>\*W</sup>

COMMENTS. So far, the species was known from eastern Chukotka and northwestern Nearctic [Saaristo & Eskov, 1996], and has a trans-Beringian range. The present record is the most southwestern extension of the range.

*Thaleria alnetorum* Eskov et Marusik, 1992\*

COMMENTS. This species is known in northern Asia east of Lena River [Eskov, 1994]. The genus and species were not reported from Kamchatka Peninsula before.

*Thaleria sukatchevae* Eskov et Marusik, 1992<sup>\*E</sup>

COMMENTS. The species was known from Chita to Magadan Area [Eskov, 1994]. The record from Koryakia is the easternmost of the range.

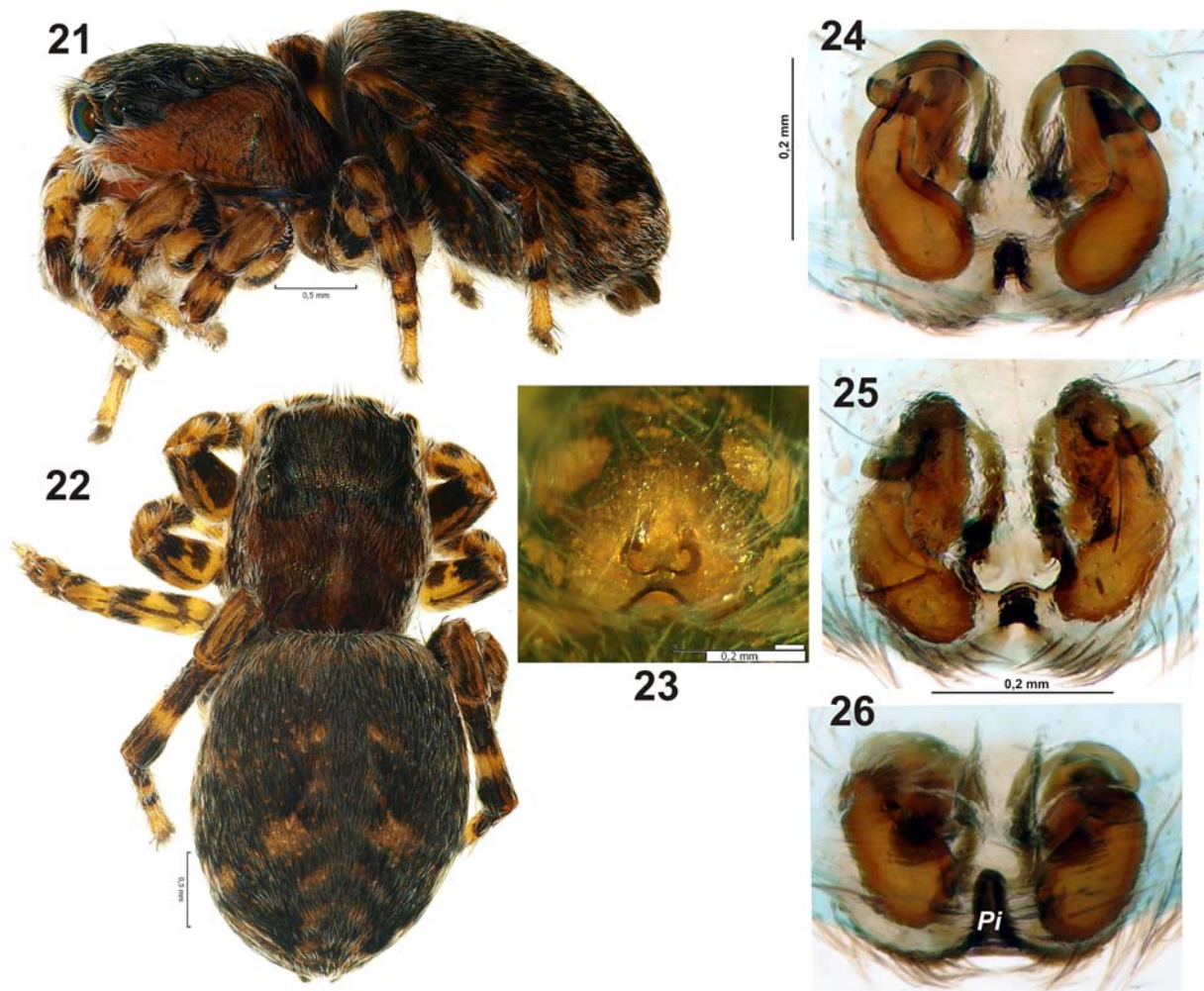
*Theoneta aterrima* Eskov et Marusik, 1991\*

COMMENTS. The species was known from the Amur Area [Tanasevitch, 2006] to the Upper Kolyma Area [Eskov, 1994]. The record from Koryakia is the most eastern for the species and the genus.

*Walckenaeria korobeinikovi* Esyunin et Efimik, 1996<sup>E</sup>

COMMENTS. The species is known from east of Finland to Kamchatka and western Chukotka [Marusik et al., 2000; Tanasevitch, 2006]. The record from Koryakia is the most eastern of the range.





Figs 21–26. Female of *Sitticus cutleri*. 21–22 — habitus, lateral and dorsal; 23 — intact epigyne, ventral; 24–26 — epigyne after maceration, dorsal, ventral and caudal (showing deep pit, *Pi*).

Рис. 21–26. Самка *Sitticus cutleri*. 21–22 — габитус, латерально и сверху; 23 — интактная эпигина, снизу; 24–26 — эпигина после мацерации, сверху, снизу и сзади (показана глубокая ямка, *Pi*).

*Zornella orientalis* Marusik, Koponen et Buckle, 2007\*<sup>E</sup>

COMMENTS. This species was known from northern Cisokhotia and the upper reaches of the Kolyma River [Marusik et al., 2007] only. The new record extends the known range of the species about 20° to the East.

Tanasevitch [2008] consider this species as synonym of *Z. cultrigera* (L. Koch, 1879) known from Fennoscandia to Yakutia and northern Cisamuria.

#### LYCOSIDAE

*Tricca alpigena* (Doleschall, 1852)\*

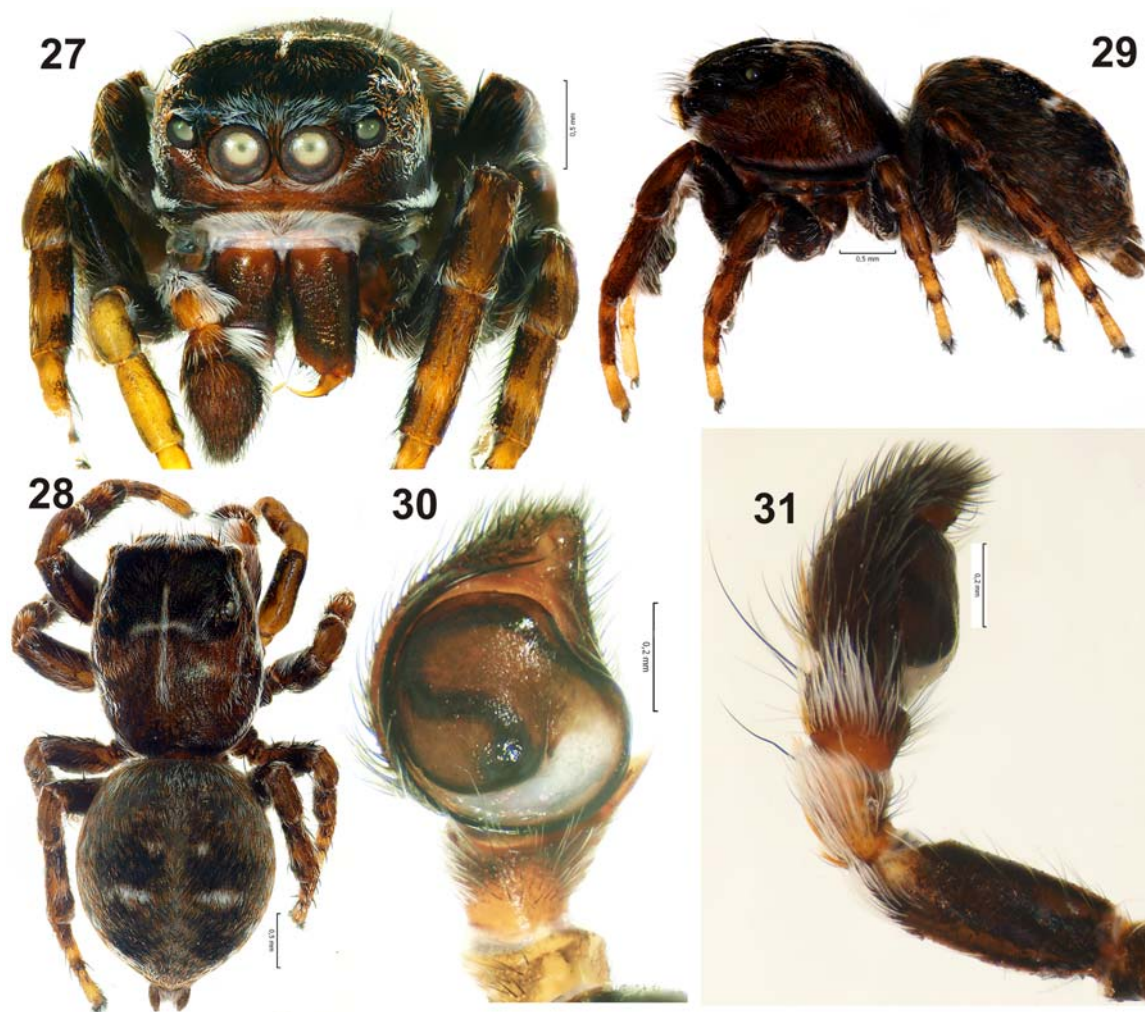
COMMENTS. This species has a circum-Holarctic range [Platnick, 2013], and is widespread in Siberia [Mikhailov, 1997]. Neither the species nor the genus were never reported from Kamchatka Peninsula before.

#### SALTICIDAE

*Sitticus cutleri* Prószyński, 1980\*

Figs 21–26.

COMMENTS. This species has Siberio - West Ne-arctic range. Within Siberia it was known from Yenisei to Kolyma River. The record from Koryakia is the easternmost in the Palaearctic. The single female has epigyne and vulva corresponding well with the figures published in the literature. Females of this species can be easily distinguished from all congeners by having rather deep pit in posterior part of epigyne (Figs 24–26). It is worth noting that female was collected almost in the same habitat as male of *S. floricola*.



Figs 27–31. Male of *Sitticus floricola*. 27–29 — habitus, frontal, dorsal and lateral; 30 — palp, ventral; 31 — palp, prolateral (shows characteristic white hairs).

Рис. 27–31. Самец *Sitticus floricola*. 27–29 — габитус, фронтально, сверху и латерально; 30 — пальпа, снизу; 31 — пальпа, пролатерально (показаны характерные белые волоски).

*Sitticus floricola* (C.L. Koch, 1837)

Figs 27–31.

COMMENTS. This species was already reported from Koryakia [Marusik & Khrulyova, 2011]. The present record is the northernmost in Far East Asia. Although this species is well illustrated in many publications [cf. Platnick, 2013], habitus, pattern and diagnostic white hairs on male palp were never properly documented. Therefore, we provide figures of our specimen. It is worth noting that *S. floricola* is a single species in the *floricola*-group that has no fine loop of the seminal duct in the tegulum (Fig. 30). This fine loop is species specific in the group.

TETRAGNATHIDAE

*Tetragnatha dearmata* Thorell, 1873<sup>^</sup>

COMMENTS. The species has Holarctic range [Platnick, 2013], and was known in Koryakia before. Although we have only juvenile specimens, it was easy to distinguish it from *T. extensa*, the only other species of the genus known in northeastern Siberia because of the lack of an sternal pattern.

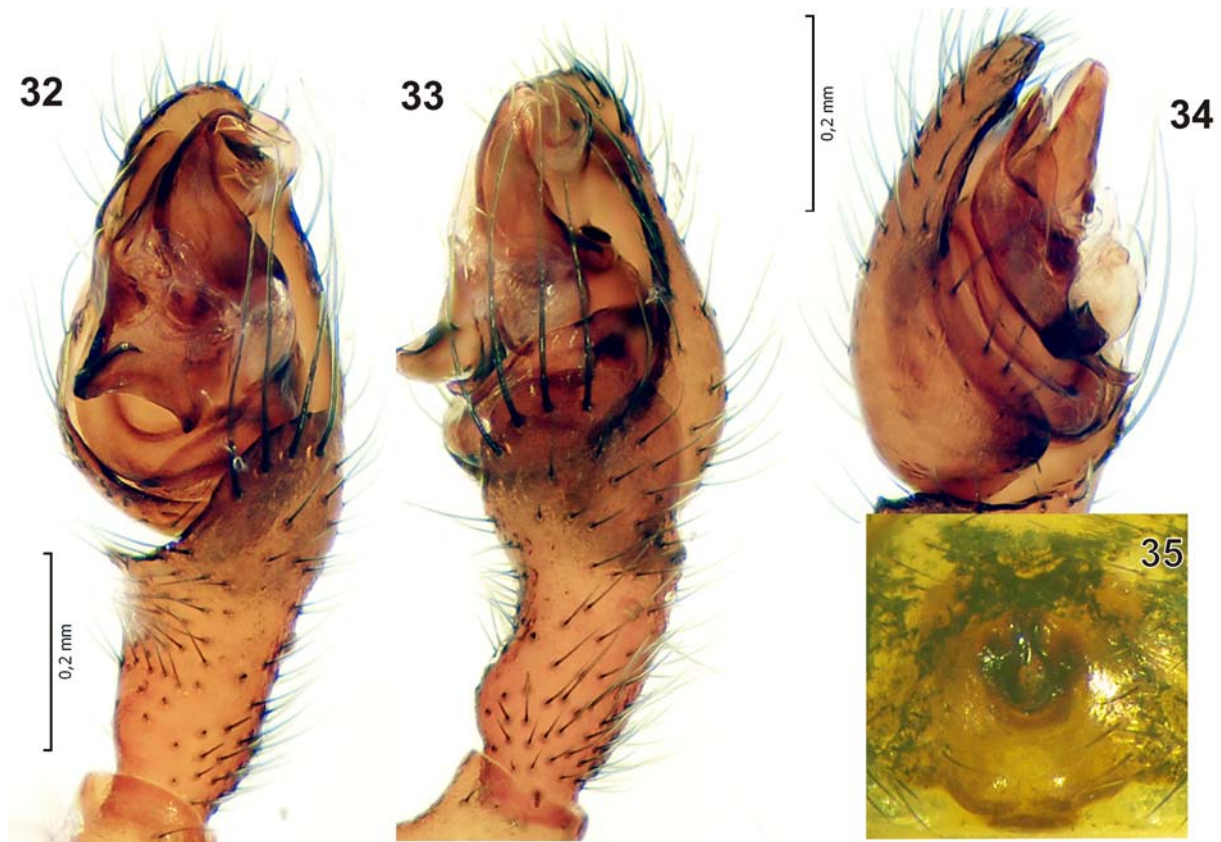
THERIDIIDAE

*Robertus lyrifer* Holm, 1939

Figs 32–43.

COMMENTS. This species was recorded from Koryakia earlier [Marusik et al., 2010]. Here we provide





Figs 32–35. *Robertus lyrifer*. 32–34 — palp, ventral, retrolateral and prolateral; 35 — epigyne, ventral.

Рис. 32–35. *Robertus lyrifer*. 32–34 — пальпа, снизу, ретролатерально и пролатерально; 35 — эпигина, снизу.

figures of this species because it was never illustrated in details. Male of this species have modified palpal tibia with hairy field. This field besides hairs has pores (Fig. 41).

#### THOMISIDAE

*Ozyptila orientalis* Kulczyński, 1926<sup>^</sup>

COMMENTS. This species was described from the southern part of Kamchatka, but was not known from Koryakia.

*Xysticus albidus* Grese, 1908\*

COMMENTS. This species has trans-Palaearctic range and most of its records lie in tundra zone [Marusik & Eskov, 2009]. While we have only a subadult male, it was easy to determine the identification thanks to lack of processes in bulbal part, and the large retrolateral extension corresponding to a large coiled embolus.

#### ZORIDAE

*Zora* cf. *nemoralis* (Blackwall, 1861)

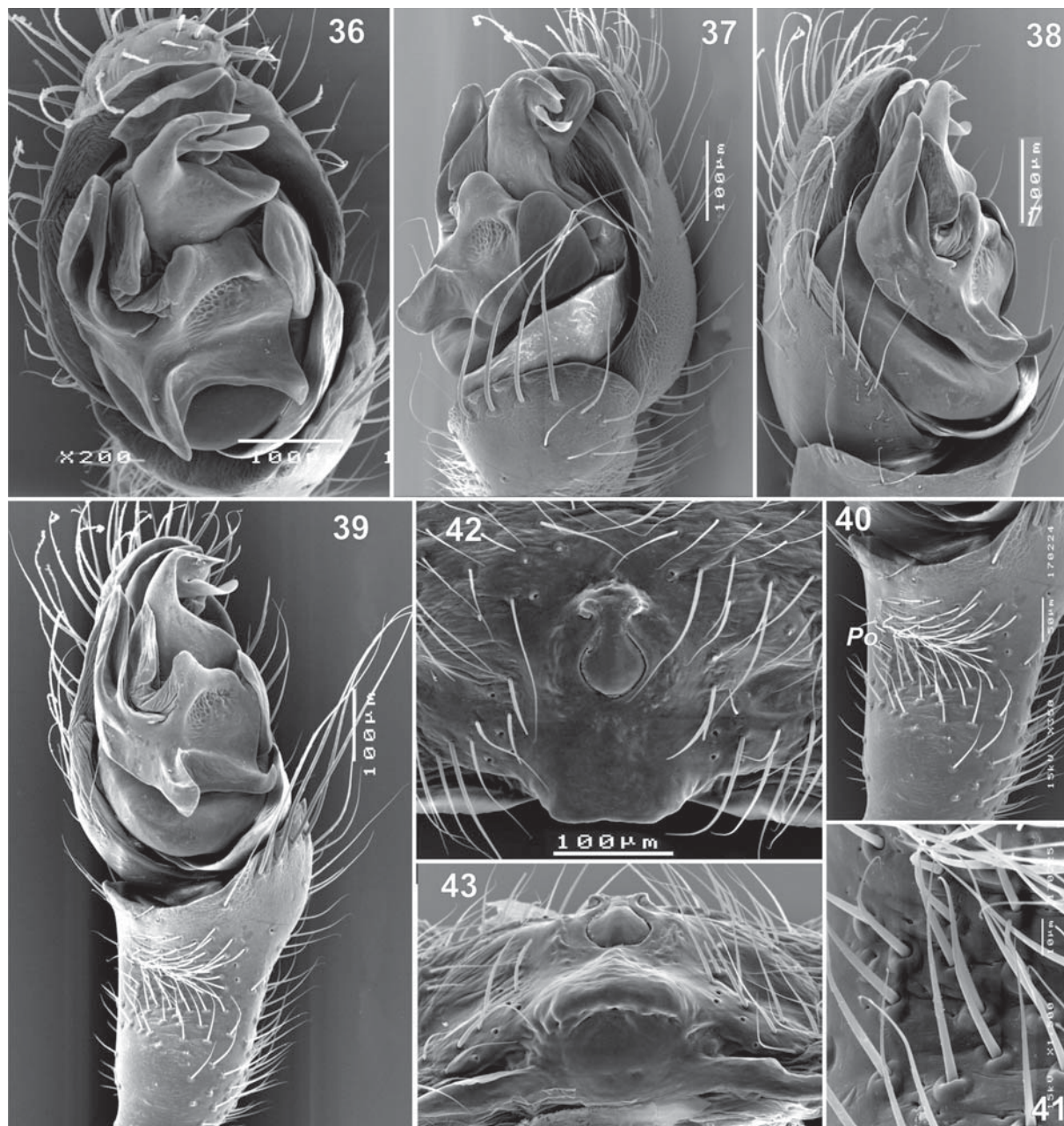
COMMENTS. It is an undescribed species close to *Z. nemoralis*. It is widespread in Siberia. Earlier it was reported as *Zora* sp. from western Koryakia [Marusik

et al., 2010] on the basis of females, which are indistinguishable from *Z. nemoralis*.

#### Conclusions

The new material from Eastern Koryakia brought 37 new species and one family (Agelenidae) records to Koryakia. Of them, 25 species, six genera (*Arctella* Holm, 1939; *Concavocephalus* Eskov, 1989; *Pseudocyba* Tanasevitch, 1984; *Thaleria* Tanasevitch, 1984; *Theoneta* Eskov et Marusik, 1991, *Tricca* Simon, 1889 and *Zornella* Jackson, 1932) are new for Kamchatka Peninsula. For 11 species, record from eastern Koryakia is easternmost in the range. For three species of Linyphiidae, Koryakia is westernmost locality in the range.

Totaling the numbers found of the newly identified species found in Koryakia (which reached 148) (Table 1), numbers of species found in Kamchatka Peninsula became 264. While numbers of species found in Koryakia and Kamchatka became higher, nevertheless they remain poorly studied in comparison to adjacent Magadan Area, Chukotka or Sakhalin. We expect not less than 500 species in Kamchatka Peninsula and not less than 300 in Koryakia. Most of new finds can be in Linyphiidae, a most diverse family in the North. If not



Figs 36–42. *Robertus lyrifer* (from environs of Magadan). 36–38 — bulb and cymbium, anterior, retrolateral and prolateral; 39 — male palp, ventral; 40 — male palpal tibia; 41 — same, showing hairy area with pores (Po); 42–43 — epigyne, ventral and caudal.

Рис. 36–42. *Robertus lyrifer* (из окрестностей Магадана). 36–38 — бульбус и цимбиум, спереди, ретролатерально и пролатерально; 39 — пальпа самца, снизу; 40 — голень пальпы самца; 41 — то же самое, показана зона с порами (Po); 42–43 — эпигина, снизу и сзади.

speaking in absolute numbers, but in relative, many new finds will be in Lycosidae and Gnaphosidae and in other groups of wandering spiders. Pitfall traps, most effective method for collecting wandering spiders, was never applied on the peninsula, but only on Karaginski Island [Marusik & Khrulyova, 2011].

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