

New faunistic and taxonomic data on spiders (Arachnida: Aranei) from the Russian Far East

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Abstract — The occurrence of *Kishidaia conspicua* (L. Koch 1866) in the Russian Far East is confirmed. This species name is shown to be a senior synonym of *K. xinping* Song, Zhu & Zhang 2004 syn. n. Two new combinations are established: *Yunohamella serpatusa* (Guan & Zhu 1993) comb. n. and *Yunohamella palmgreni* (Marusik & Tsellarius 1986) comb. n., both ex *Theridion*. *Yunohamella serpatusa* is shown to be a senior synonym of *Theridion tigræ* Esyunin & Efimik 1996 syn. n. The record of *Yunohamella serpatusa* from the Botchinski Reserve (Khabarovsk Province) lies at the easternmost limit of its range. Spiders from the Botchinski Reserve are reported for the first time.

Key words — Asia, new combinations, new synonymies, new records, Maritime Province, Khabarovsk Province

Introduction

Spiders of the south part of the Russian Far East are relatively well-studied, as compared to other regions of Russia. Although the total number of species reported from this region (870; Mikhailov 2016) is lower than that of the Russian Plain or South Siberia (1381 and 1045 respectively), their density (i.e., species number per one square kilometer) is much higher; see Mikhailov (2016) for further details. In parallel with other Russian territories, the south part of the Russian Far is studied unevenly in respect to its spider fauna or taxonomy of recorded/described species. In this region, there are only two well-studied sites with over 300 reported species: the Bolshekhkhtsirski and Bureinski Reserves (Marusik et al. 2007; Trilikauskas 2008). The information about spider species of other localities is distributed amongst almost a hundred of publications devoted to the faunistics and systematics of spiders of Amur Area, Khabarovsk and Maritime Provinces. Recently, we have obtained newly collected spider materials from two inadequately studied localities of Khabarovsk and Maritime Provinces. These materials contain several poorly known species and a species of which the occurrence was earlier doubted by one of us (YM). Thus, the main goals of this paper are: 1) to provide a list of the species collected from the two aforementioned sites; 2) to provide illustrations and taxonomic comments on poorly known spider species; and

3) to justify two new combinations and two new synonymies.



Map 1. Collecting localities. 1, Botchinski Reserve; 2, Kedrovaya Pad' Reserve.

Material and methods

The material used in this study was opportunistically collected from the Botchinski Reserve (the eastern part of Khabarovsk Province) and from the vicinity of Barabash Village in the south part of Maritime Province. The exact localities are shown on Map 1 and detailed information about them is given in the Table 1.

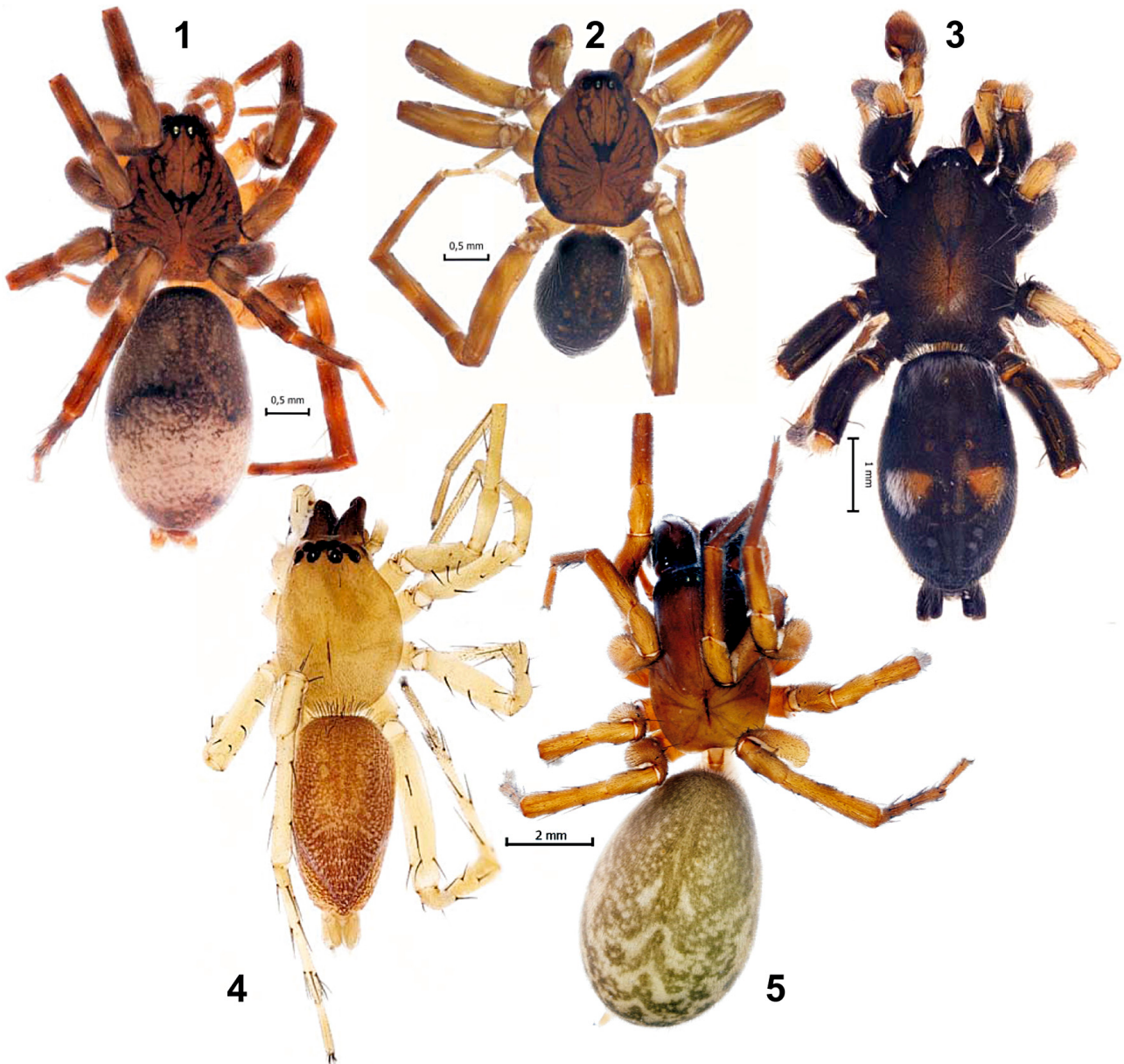
Specimens were photographed with a Canon EOS 7D camera attached to an Olympus SZX16 stereomicroscope and with a SEM JEOL JSM-5200 scanning microscope at

the Zoological Museum, University of Turku, Finland. Digital images were montaged using CombineZP image stacking software. The epigyne was cleared in a KOH/water solution until the soft tissues were dissolved. Photographs were taken of the specimens in dishes with cotton or paraffin on the bottom to hold them in position. The studied specimens are shared between the Zoological Museum of Moscow State University (ZMMU; curator: K. G. Mikhailov) and the Manchester Museum (MMUE; curator: D. V. Logunov).

Table 1. Spider species recorded from the two studied sites of the Russian Far East.

Localities	
RUSSIA, Maritime Prov., Khasan Distr., c. 9 km SSE of Barabash Vil., middle reaches of Kedrovka river (43°06'24"N 131°32'17"E), 120 m, valley forest, 22–30.05.2015, leg. K. Makarov, A.Matalin	RUSSIA, Khabarovsk Prov., Sikhote-Alin' Mt. Range, Botchinski Reserve, Tyoplyi Klyuch (48°18'N, 139°34.5'E), 17–27.06.2016, leg. V.V. Dubatolov
Agelenidae	Araneidae
<i>Alloclubionoides mandzhuricus</i> (Ovtchinnikov 1999) 19♂3♀ (ZMMU)	<i>Hypsosinga sanguinea</i> (C.L. Koch 1844) 2♀ (MMUE)
<i>Alloclubionoides paiki</i> (Ovtchinnikov 1999)* 13♂1♀ (ZMMU)	<i>Larinioides patagiatus</i> (Clerck 1757) 1♀ (MMUE)
<i>Pirineitega spinivulva</i> (Simon 1880) 1♂ (ZMMU)	<i>Plebs sachalinensis</i> (Saito 1934) 2♂1♀ (MMUE)
<i>Drassyllus biglobus</i> Paik 1986 3♂ (ZMMU)	Cheiracanthiidae
Gnaphosidae	<i>Cheiracanthium erraticum</i> (Walckenaer 1802) 5♂2♀ (MMUE)
<i>Gnaphosa potanini</i> Simon 1895 1♂ (ZMMU)	Clubionidae
<i>Haplodrassus taepaikensis</i> Paik 1992 1♂ (ZMMU)	<i>Clubiona irinae</i> Mikhailov 1991 2♂1♀ (MMUE)
Linyphiidae	<i>Clubiona riparia</i> L. Koch 1866 1♂ (MMUE)
<i>Anguliphantes zygius</i> (Tanasevitch 1993) 2♀ (ZMMU)	<i>Clubiona sopaikensis</i> Paik 1990* 1♂ (ZMMU)
<i>Centromerus amurensis</i> Eskov & Marusik 1992 - S 1♀ (ZMMU)	Gnaphosidae
<i>Centromerus pacificus</i> Eskov & Marsusik 1992 - S 2♀ (ZMMU)	<i>Drassodes cupreus</i> (Blackwall 1834) 1♂ (MMUE)
<i>Eldonnia kayaensis</i> (Paik 1965) 2♀ (ZMMU)	<i>Gnaphosa similis</i> Kulczyński 1926 1♂ (MMUE)
<i>Macrargus multessimus</i> (O. Pickard-Cambridge 1875) 2♀ (ZMMU)	<i>Haplodrassus cognatus</i> (Westring 1861) 2♂ 2♀ (MMUE)
<i>Microneta viaria</i> (Blackwall 1841) 2♀ (ZMMU)	<i>Kishidaia conspicua</i> (L. Koch 1866)* 1♂ (ZMMU)
<i>Eskovina clava</i> (Zhu & Wen 1980) 2♂1♀ (ZMMU)	Linyphiidae
<i>Parasisis amurensis</i> Eskov 1984 2♂1♀ (ZMMU)	<i>Eskovina clava</i> (Zhu & Wen 1980) 1♀ (ZMMU)
<i>Strandella pargonensis</i> (Paik 1965) 1♂ (ZMMU)	Lycosidae
(?) <i>Tibioploides arcuatus</i> (Tullgren 1955) - SE 2♀ (ZMMU)	<i>Acantholycosa lignaria</i> (Clerck 1757) - NE 1♀ (MMUE)
<i>Walckenaeria (Trachynella)</i> sp. 2♀ (ZMMU)	<i>Trochosa terricola</i> Simon 1856 2♂1♀ (MMUE)
Liocranidae	<i>Xerolycosa nemoralis</i> (Westring 1861) 3♂3♀ (MMUE)
<i>Argoeca montana</i> Hayashi 1986* 2♂1♀ (ZMMU)	Philodromidae
Lycosidae	<i>Tibellus oblongus</i> (Walckenaer 1802) 3♂ (MMUE)
<i>Trochosa terricola</i> Thorell 1856 3♂ (ZMMU)	Salticidae
Pisauridae	<i>Evarcha prozysinskii</i> Marusik & Logunov 1998 2♂1♀ (MMUE)
<i>Pisaura ancora</i> Paik 1969 1♂ (ZMMU)	<i>Marpissa pomatia</i> (Walckenaer 1802) 3♀ (MMUE)
Thomisidae	Sparassidae
<i>Ozyptila sincera</i> Kulczyński 1926 1♂ (ZMMU)	<i>Micrommata virescens</i> (Clerck 1757) 2♂ (MMUE)
	Tetragnathidae
	<i>Tetragnatha extensa</i> (Linnaeus 1758) 4♀ (MMUE)
	Theridiidae
	<i>Phycosoma mustellina</i> (Simon 1880) 1♂ (MMUE)
	<i>Steatoda bipunctata</i> (Linnaeus 1758) 1♀ (MMUE)
	<i>Yunohamella serpatusa</i> (Guan & Zhu 1993)* 1♂ (ZMMU)
	Thomisidae
	<i>Lysiteles maius</i> Ono 1979 1♂ (MMUE)
	<i>Misumena vatia</i> (Clerck 1757) 1♀ (MMUE)
	<i>Xysticus audax</i> (Schränk 1803) 2♂1♀ (MMUE)
	<i>Xysticus emertoni</i> Keyserling 1880 3♂1♀ (MMUE)

*Species marked with the asterisk are illustrated and discussed in more details in the text. Abbreviations: NE—the north-easternmost record of the species in Asia; SE—the south-easternmost record of the species in Asia; S—the southernmost record of the species in Asia.



Figs. 1-5. Habitus of *Agroeca montana* (1-2), *Kishidaia conspicua* (3), *Clubiona sopaikensis* (4) and *Alloclubionoides paiki* (5). Scales=0.5 mm (1-2); 1 mm (3); 2 mm (4-5).

Results

A total of 47 species from 15 families have been recorded from the two studied localities; see Table 1 for further details. The findings of some rare and/or poorly documented species are discussed with more details below; all these species are illustrated on the basis of the studied materials.

Family Agelenidae

Alloclubionoides paiki (Ovtchinnikov 1999)

Figs. 5, 6-9, 12-15

Ambanus paiki Ovtchinnikov 1999: 66, f. 12-15 (♂♀).

Comments. This species has been known by the original publication only. It was described on the basis of the specimens collected from Kedrovaya Pad' Reserve and two neighbouring localities in Khasan District. The new record from Maritime Province is close to Kedrovaya Pad'. The species seems to be endemic to Khasan District.



Figs. 6–11. Left male palp of *Alloclubionoides paiki* (6–9) and *Kishidaia conspicua* (10–11). 6, 11, retrolateral view; 7, 10, ventral view; 8, bulb, anterior view; 9, prolateral view. Scales=0.2 mm.

Three other *Alloclubionoides* species described by Ovtchinnikov (1999: sub *Ambanus* spp.) have already been redescribed. Here we provide figures of the female habitus and the copulatory organs of *A. paiki* (Figs. 6–9, 12–15). Both the male and the female of *A. paiki* can be easily distinguished from its congeners occurring in the Far East by

the shape of epigyne and bulb (cf. Ovtchinnikov 1999: sub *Ambanus* spp.).



Figs. 12–16. Epigyne of *Alloclubionoides paiki*. 12–13, ventral view (13, with hairs taken away); 14–15, macerated, dorsal and dorso-anterior views. Scales = 0.2 mm.

Family Clubionidae

Clubiona sapaikensis Paik 1990
Figs. 4, 16–18, 19–22, 28

Clubiona sapaikensis Paik 1990: 93, f. 32–39 (♂); Mikhailov 1991: 214, f. 24–29 (♂♀).

Comments. Although the species has been reported from several localities in Amur Area and Jewish Autonomous Region, as well as from Khabarovsk and Maritime Provinces, its male has never been properly illustrated, especially as far as the base of its embolus concern. Therefore we have provided figures of its palp and habitus (Figs. 4, 16–18, 19–22, 28).

Family Gnaphosidae

Kishidaia conspicua (L. Koch 1866)
Figs. 3, 10–11, 25–26

Poecilochroa conspicua: Grimm 1985: 164, f. 190–192 (♂♀).

Kishidaia conspicua: Kamura 2001: 199, f. 24–30; Murphy 2007: 46, f. 282–283 (♂♀).

Kishidaia xinpingsong Song, Zhu & Zhang 2004: 160, 326, f. 94A–G (♂), **syn. n.** The ♂ holotype in the College of Life Sciences, Hebei University, Baoding, Hebei, China (CLSC); examined.

Types. *Kishidaia xinpingsong* Song, Zhu & Zhang 2004: Holotype ♂ (CLSC) from China, Shaanxi Province, Zhouzhi County, Louguantai (34°N, 108°18'E), June 1991, X.-P. Wang.

Comments. This species has been reported from Amur Area, Khabarovsk and Maritime Provinces several times, but it seems that all these records were based on misidentifications with the sibling *K. albimaculata* (Saito 1934), which is very common in the region (Mikhailov 2013 and pers. comm.). The present finding from the Botchinski Reserve is the first proven record of the species from the region at hand, lying at the easternmost limit of the species' range. This Palaearctic species demonstrates a disjunction between East Kazakhstan Area and the Russian Far East (about 4000 km, or 55°). On the basis of the re-examination of the holotype male and the figures of *K. xinpingsong* Song, Zhu & Zhang 2004, we have concluded that both the



Figs. 16–18. Left male palp of *Clubiona sopaikensis*, ventral, retrolateral and dorso-prolateral views. Scale=0.2 mm.

general appearance and copulatory organs of the latter species are identical (femoral and tibial apophyses, embolus) to those of *K. conspicua* and thus both names are to be synonymized.

Liocranidae

Agroeca montana Hayashi 1986
Figs. 1–2, 23–24, 27, 29–34

Agroeca montana Hayashi 1986: 24, f. 1–10 (♂♀); Marusik et al. 2016: 7, f. 24–25 (♀).

Comments. This species was recently reported as new to Russia (Marusik et al. 2016). The record was based on a single female collected from Vladivostok. Here we present figures of both sexes (Figs. 1–2, 23–24, 27, 29–34). This species is known from Korea, China (Liaoning) and Japan.

Theridiidae

Yunohamella serpatusa (Guan & Zhu 1993) **comb. n.**
Figs. 35–39

Theridion serpatum Guan & Zhu, in Zhu et al. 1993: 92, f. 14–17 (♂); Zhu 1998: 194, f. 127A–D (♂); Song et al. 1999: 142, f. 79M–N (♂); Seo 2015: 109, f. 3A–G (♂). The ♂ holotype in the College of Life Sciences, Hebei University, Baoding, Hebei, China (CLSC); examined.

Theridion tigræ Esyunin & Efimik 1996: 1275, f. 1–5 (♂♀), **syn. n.**

Types. Holotype ♂ (CLSC) from China, Liaoning, Qingyuan County, May 1986.

Note. The type and/or comparative materials on *Theridion tigræ* are not available at the Perm University, where they should have been deposited (S. L. Esyunin pers. comm.).

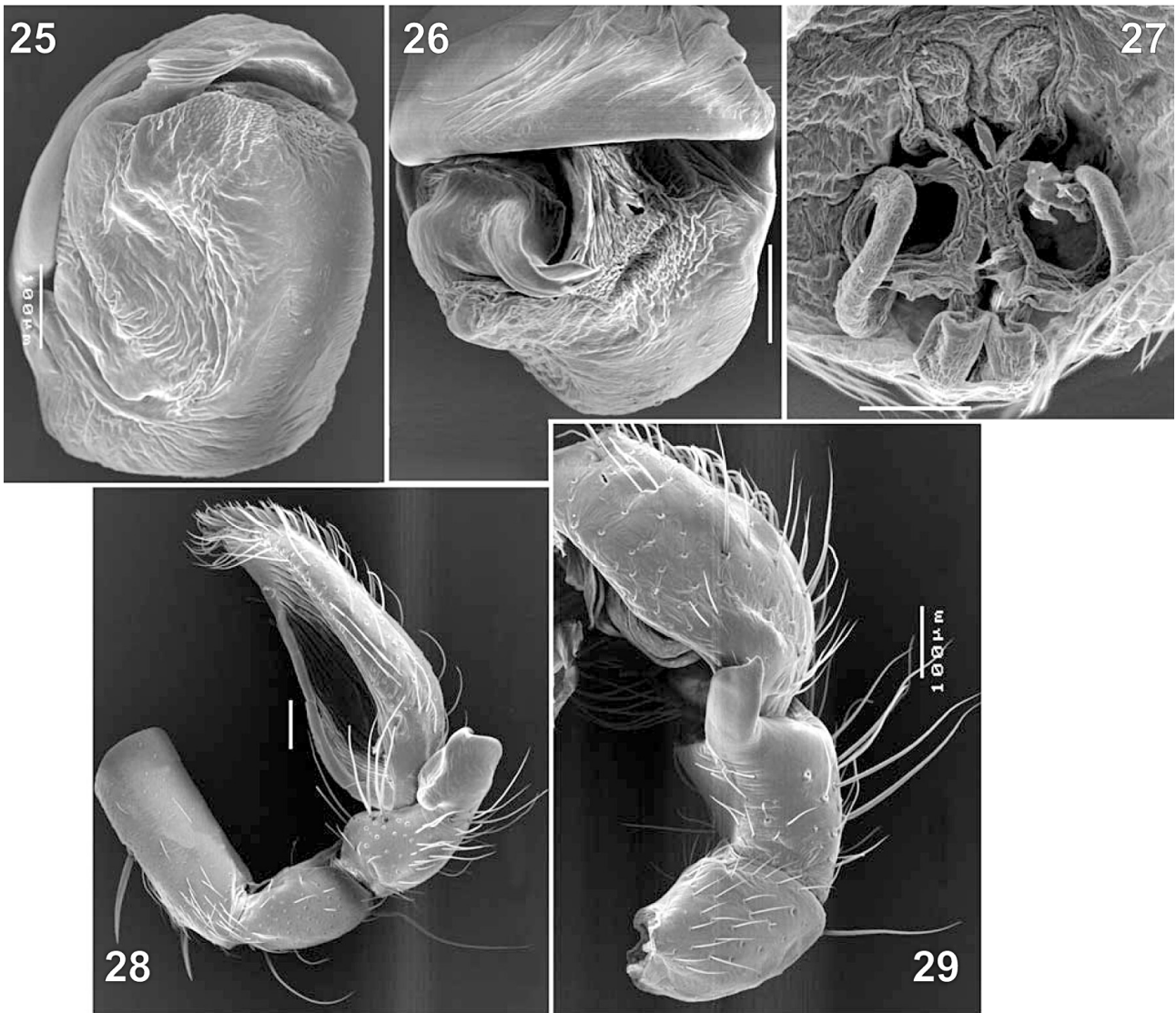
Comments. This species was already reported from the Russian Far East (Marusik et al. 2007), but this information



Figs. 19–24. Left male palp of *Clubiona sopaikensis* (19–22) and *Agroeca montana* (23–24). 19–20, bulb, ventro-anterior and ventral views; 21, cymbium and tibia, antero-retrolateral view; 22, tibia, retrolateral view; 23–24, bulb, ventral and ventro-anterior views. Scales=0.1 mm.

is absent from the World Spider Catalog (2017). It was reported either as *Theridion serpatum*, or as *T. palmgreni* Marusik & Tsellarius 1986. The latter species is rather similar to *T. serpatum* and, in our opinion, its records from the Far East are based on misidentifications.

While trying to illustrate *T. serpatum*, we have recognized that it is not related to *Theridion pictum* (Walckenaer 1802), the type species of the genus, but to *Yunohamella yunohamensis* (Bösenberg & Strand 1906), the type species of *Yunohamella* Yoshida 2007. *Yunohamella yunohamensis*



Figs. 25–29. Copulatory organs of *Kishidaia conspicua* (25–26), *Agroeca montana* (27, 29) and *Clubiona sopsaikensis* (28). 25–26, bulb of left male palp, ventral and ventro-anterior views; 27, epigyne, dorsal view; 28, left male palp, ventro-retrolateral view; 29, left male palp, retrolateral view. Scales=0.1 mm.

and its congeners have the strongly developed tegulum, forming a kind of the conductor, in which the short embolus is hidden. As *Theridion serpatosum* and *T. palmgreni* are very close to each other, having a very similar conformation of the male palp, we have proposed new combinations for both these species: *Yunohamella serpatosa* (Guan & Zhu 1993) **comb. n.** and *Yunohamella palmgreni* (Marusik & Tselarius 1986) **comb. n.**

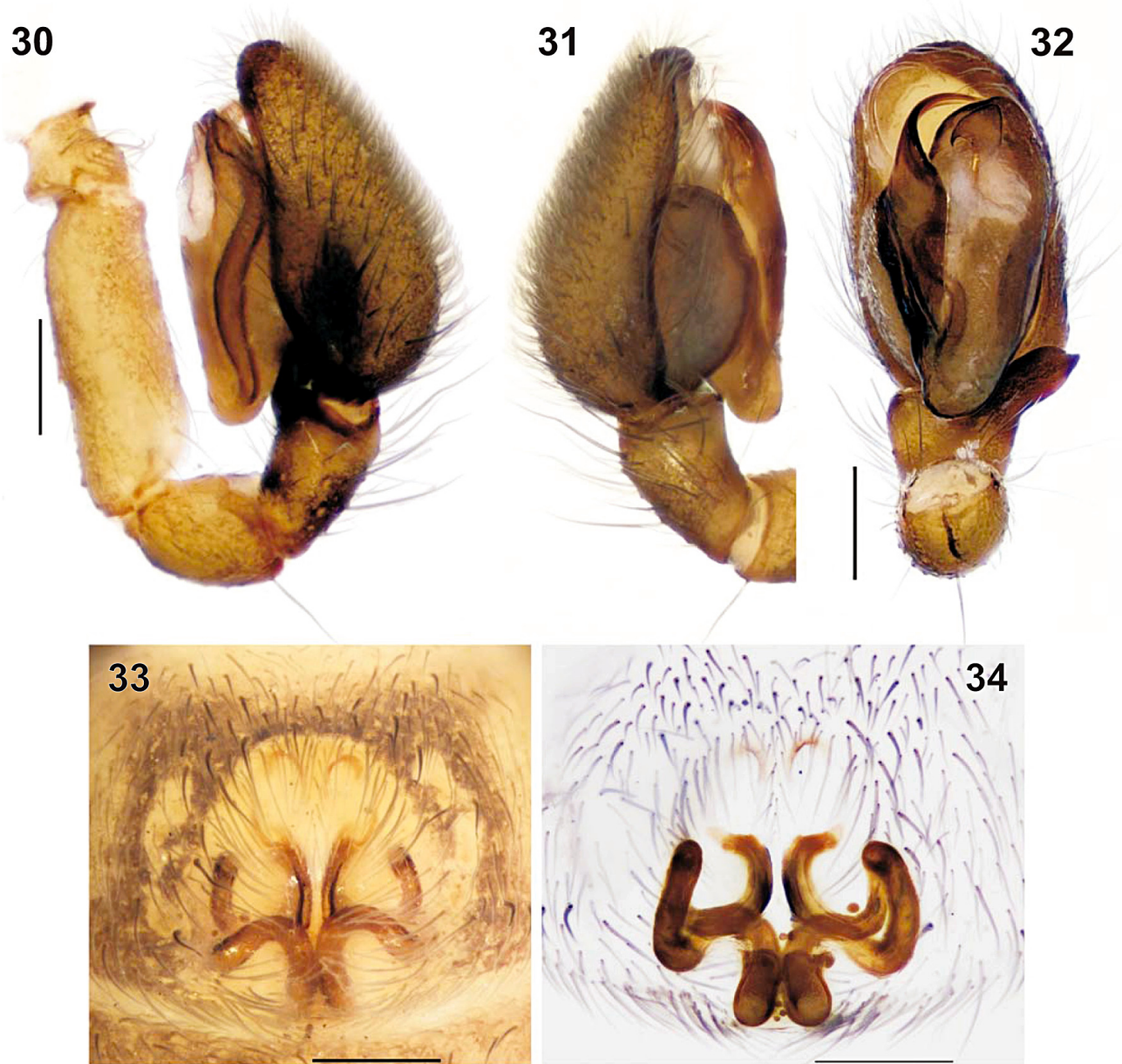
On the basis of similarity of the male palp, similar body size and leg length, we have synonymized *T. tigræ* Esyunin & Efimik 1996 **syn. n.** with *Yunohamella serpatosa* (Guan & Zhu 1993). *Theridion tigræ* was described on the basis of the holotype male and several paratype females from the Urals. Unfortunately, we have been unable to compare the holotype of *T. tigræ* with our specimen, because the entire type series is not available at the Perm University (Russia);

apparently it was borrowed and not yet returned by Alexander Gromov.

Distribution. *Yunohamella serpatosa* is known from a single locality in Liaoning, one locality in the eastern part of South Korea, from several localities in Khabarovsk and Maritime Provinces; three localities in the Urals (Esyunin & Efimik 1996: sub *Theridion tigræ*) and the Altai Reserve (Trilikauskas 2012). The record from Botchinski Reserve lies at the easternmost limit of the species' range, whereas that from Bolshekhetsyrski Reserve (Marusik et al. 2007) is the northernmost record.

Acknowledgments

We wish to thank Olga L. Makarova (Moscow, Russia) and Vladimir V. Dubatolov (Novosibirsk, Russia) for giving access to newly collected spider materials from the Russian Far East, Kirill G.

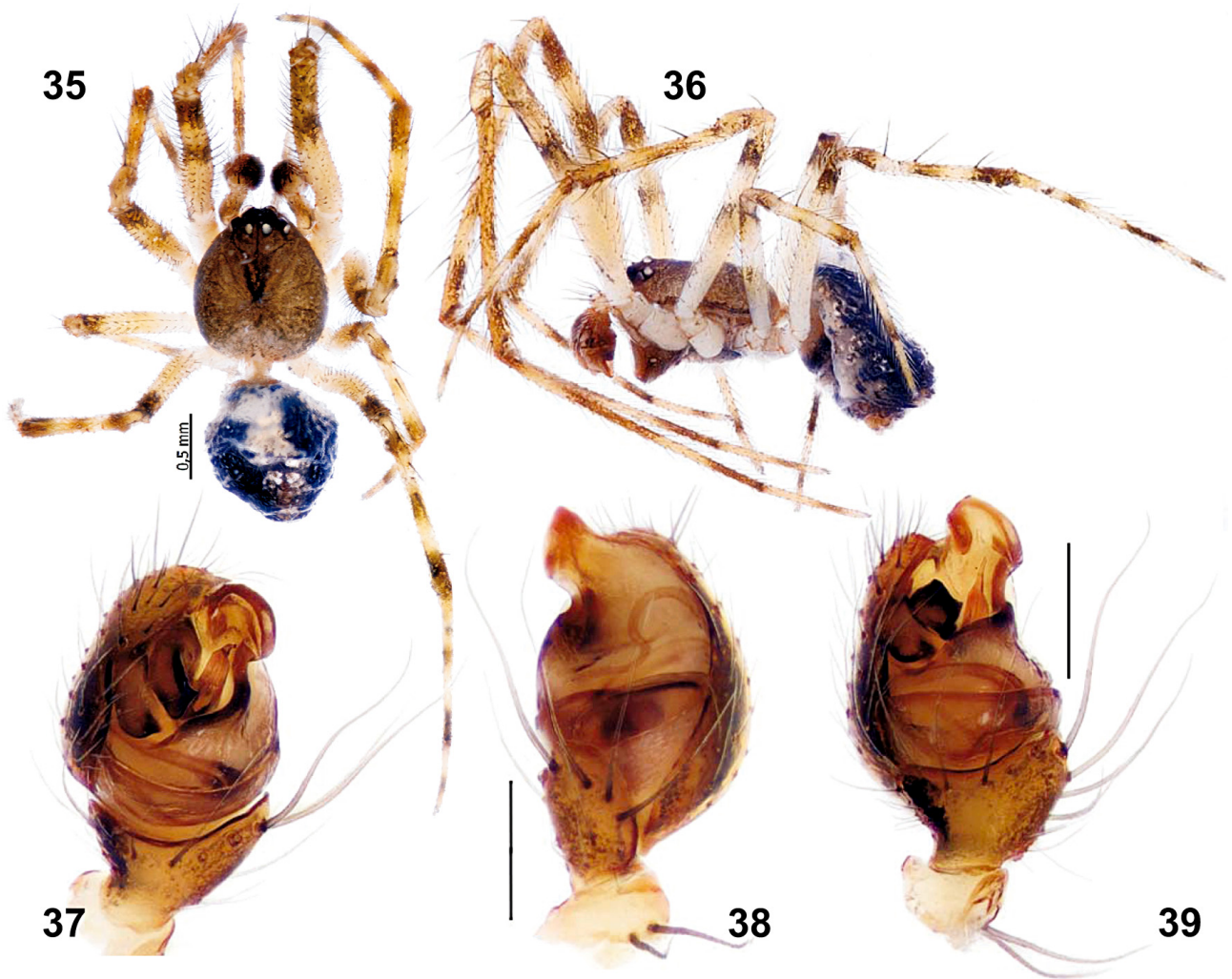


Figs. 30–34. Copulatory organs of *Agroeca montana*. 30–32, left male palp, retrolateral, prolateral and ventral views; 33–34, epigyne, ventral and dorsal views. Scales=0.2 mm.

Mikhailov (Moscow, Russia) for the information about spider distribution within Russia, and Sergei L. Esyunin (Perm, Russia) for the information about the type series of *T. tigræ*. We thank Feng Zhang (Baoding, China) for allowing us to study the holotypes of *Theridion serpatosum* and *Kishidaia xiping*. Anonymous referees are thanked for their critical comments that helped us to improve the ms.

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Figs. 35–39. Male habitus and left male palp of *Yunohamella serpatusa*. 35–36, habitus, dorsal and lateral views; 37–39, palp, ventral, retrolateral and prolateral views. Scales=0.5 mm (35–36); 0.2 mm (37–39).

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Received September 30, 2017 / Accepted November 10, 2017