

New biogeographical records of spiders and harvestmen (Arachnida: Araneae & Opiliones) from West Siberia, including an annotated list of species

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Fifty-three species of spiders and one species of harvestmen were found in the previously unstudied Gydansky Peninsula, northwestern Siberia. Distribution for each species is given. Records of certain species are of a special interest: *Xysticus viduus* (the northernmost locality in its range), *Crosbylonia borealis* (the westernmost), *Oreoneta eskovi* (the northernmost and the westernmost), *Clubiona norvegica* (the easternmost in Asia), *Pachygnatha listeri*, *Helophora insignis* and *Mitopus morio* (the northernmost in Asia) and *Oreoneta leviceps* (the southernmost in the Palaearctic). Three species, *Oreoneta eskovi*, *Pardosa oljunae* and *Thaleria orientalis*, are endemics of West Siberia. About two-thirds of the species are either circum-Holarctic or trans-Palaearctic.

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1. Introduction

Northern parts of West Siberia are rather poorly studied in respect of spiders in comparison to adjacent the Polar Ural or Taimyr Peninsula, northern Yakutia and Chukotka (Marusik & Eskov 2009: map 1). An exception is the Yamal Peninsula, of which the spider fauna has dealt with in several papers (Kulczyński 1916, Koponen *et al.* 1998, Tanasevitch *et al.* 2009). Practically no spiders or harvestmen have been reported between Taimyr and Yamal Peninsula (cf. Striganova & Poryadina 2005). We had recently an opportunity to study spiders and harvestmen collected in Tymen' Area, north of the Polar Circle or close to

it in the southern part of the Gydansky Peninsula and in more southern parts of the Yamalo-Nenets Autonomous District.

2. Materials and methods

All material was collected by coleopterist M. A. Khrisanova (Ufa State University), and it was given to us by T. V. Piterkina (Moscow). The specimens were caught in the three geographical localities listed below (see also Fig. 1). The material treated here will be shared between the Zoological Museum of the Moscow State University and the Manchester Museum, the University of Manchester.



Fig. 1. Collection localities: 1) Messo Faktoria, 2) Tazovski Village and 3) Pyakol'ski Reservation.

All collecting localities belong administratively to the Tumen' Area and lie in the Yamalo-Nenets Autonomous Okrug (District), NW Siberia (Fig. 1):

- 1) Tazovski District, Messo-Yakhinski Zakaznik (forest reservation), Messo Faktoria, approximately $68^{\circ}29'13''$ N $79^{\circ}22'33''$ E, pitfall traps, 29.VI.–19.VII.2008
- 2) Tazovski District, Tazovski Village, approximately $67^{\circ}27'20''$ N $78^{\circ}42'22''$ E, pitfall traps, 27.VI.–21.VII.2008

- 3) Krasnosel'kupski District, Pyakol'ski Zakaznik (protected forest reservation), approximately $65^{\circ}22'$ N $82^{\circ}17'$ E, pitfall traps and sweeping, 29.VII.–11.VIII.2008.

3. Species survey

Below, we comment briefly upon the most interesting observations. The list of species found, the number of specimens collected, and the distribution of each species are shown in Table 1.

3.1. Order Araneae

3.1.1. Family Araneidae

Araneus marmoreus Clerck, 1757

The species has a circum-Holarctic range. This record is the northernmost in Siberia.

Cyphepeira silvicultrix (C.L. Koch, 1835)

The species has a trans-Palaeartic range. This record is the northernmost in Siberia.

3.1.2. Family Clubionidae

Clubiona norvegica Strand, 1900

Although the species is considered as Holarctic (Platnick 2014), it has not been recorded from Siberia east of Yenisei River (Mikhailov 2013). In Western Siberia, it was recorded west of the Yuganski Reserve (about 74°E) (Mikhailov 2003). The present record extends the known range about 4° to the east.

3.1.3. Family Dictynidae

Arctella lapponica Holm, 1945

The species has a trans-Palaeartic–West Nearctic arcto-boreal range.

3.1.4. Family Gnaphosidae

Gnaphosa nigerrima L. Koch, 1877

The species has a trans-Palaeartic arcto-boreal range. In Messo-Yakhinski Reservation it was collected together with *G. orites* Chamberlin, 1922 in the same habitat. These two species have been never reported to co-occur in the same habitat.

Gnaphosa sticta Kulczyński, 1908

The species has a trans-Palaeartic range but has not been reported previously in West Siberia. Its occurrence in Gydanski Peninsula was expected.

3.1.5. Family Linyphiidae

Crosbylonia borealis Eskov, 1988

The species has a Siberian boreal range. Earlier, it was known east of Putorana Plateau (about 90°E). Our record is the westernmost in the range and extends the known range about 12° to the west.

Helophora insignis (Blackwall, 1841)

The species has a circum-Holarctic range. The record from Pyakol'ski Zakaznik is the northernmost in Asia.

Oreoneta eskovi Saaristo & Marusik, 2004

Previously this species was known from only two localities along the Yenisei River, and one questionable locality in Altai (Saaristo & Marusik 2004). The present record extends the known range about 10° to the west.

Oreoneta leviceps (L. Koch, 1879)

The species has a Siberian-Nearctic arctic range and is known in Eurasia from the Polar Ural and across the tundra zone of Siberia. The present record is the southernmost in Asia.

Porrhomma sp.

The species could not be identified with certainty because we have only one female specimen. Two species of this genus were reported from more southern areas of Tymen' Province: *P. pallidum* Jackson, 1913 and *P. pygmaeum* (Blackwall, 1834) (Tanasevitch 2005).

Savignia sp.

The species can not be identified with certainty because we have only one female specimen. *Savignia* Blackwall, 1833 is a rather species-rich genus in Siberia.

Thaleria orientalis Tanasevitch, 1984

The species has a West Siberian boreal range and is known from the Polar Ural to the mid-Yenisei River (approximately 62°N) and south to the West Sayan Mts.

Zornella cultrigera (L. Koch, 1879)

The species has almost a trans-Palaeartic range and is known from Norway to Yakutia. In northeastern Siberia it is replaced by a sibling species, *Z. orientalis* Marusik, Buckle et Koponen, 2007. Tanasevitch (2008) considered these two names are synonymous.

3.1.6. Family Lycosidae

Pardosa oljunae Lobanova, 1978

The species has a West Siberian range and is known from the South Yamal southward to Altai and Tuva (Marusik *et al.* 2000).

Table 1. List of species collected at three study localities (1–3, see Fig. 1). Species range types: cH: circum-Holarctic, m: middle, N: Nearctic, S: Siberian, P: Palearctic, t: trans, w: west. West Siberian endemics are marked with *.

	1	2	3	Range
Araneae				
Araneidae				
<i>Araneus marmoreus</i> Clerck, 1757			1♂	cH
<i>Araneus quadratus</i> Clerck, 1757			1♀	tP
<i>Cyphopeira silvicultrix</i> (C.L. Koch, 1835)			1♀	tP
<i>Larinioides cornutus</i> (Clerck, 1757)	1♀	5♂♀		cH
<i>Larinioides patagiatus</i> (Clerck, 1757)			1♂	cH
Clubionidae				
<i>Clubiona norvegica</i> Strand, 1900	1♀			wPN
Dictynidae				
<i>Arctella lapponica</i> Holm, 1945	7♂♀	1♀		tP–wN
Gnaphosidae				
<i>Gnaphosa nigerrima</i> L. Koch, 1877	73♂♀			tP
<i>Gnaphosa orites</i> Chamberlin, 1922	60♂♀			cH
<i>Gnaphosa stricta</i> Kulczyński, 1908	8♂♀			tP
<i>Haplodrassus hiemalis</i> (Emerton, 1909)	2♂			SN
<i>Micaria aenea</i> Thorell, 1871	12♂♀			cH
Linyphiidae				
<i>Bathyphantes eumenis</i> (L. Koch, 1879)	1♀			cH
<i>Bolephthyphantes index</i> (Thorell, 1856)			1♂	tP
<i>Crosbylonia borealis</i> Eskov, 1988	1♂			S
<i>Gonatum rubens</i> (Blackwall, 1833)	1♀			tP
<i>Helophora insignis</i> (Blackwall, 1841)			1j	cH
<i>Hilaira herniosa</i> (Thorell, 1875)	2♂♀			cH
<i>Hypselistes jacksoni</i> (O. P.-Cambridge, 1902)	1♀	1♀		tP–wN
<i>Insetophantes laricetorum</i> (Tanasevitch et Eskov, 1987)	1♀			S
<i>Kaestneria pullata</i> (O. P.-Cambridge, 1863)		1♀		cH
<i>Macrargus multesimus</i> (O. P.-Cambridge, 1875)		1♀		cH
<i>Maso sundevalli</i> (Westring, 1851)	1♀			cH
<i>Minyrioloides trifrons</i> (O. P.-Cambridge, 1863)	1♀			cH
* <i>Oreoneta eskovi</i> Saaristo et Marusik, 2004	1♂			wS
<i>Oreoneta leviceps</i> (L. Koch, 1879)		1♂		SN
<i>Oryphantes geminus</i> (Tanasevitch, 1982)	1♂			wmS
<i>Porrhomma</i> sp.	1♀			
<i>Savignia</i> sp.	1♀			
<i>Styloctetor lehtineni</i> Marusik et Tanasevitch, 1998	4♀			S
* <i>Thaleria orientalis</i> Tanasevitch, 1984	1♂			wS
<i>Zornella cultrigera</i> (L. Koch, 1879)	34♂♀			tP
Lycosidae				
<i>Alopecosa aculeata</i> (Clerck, 1757)	16♂	8♂♀		cH
<i>Alopecosa hirtipes</i> (Kulczyński, 1907)	3♂♀			SN
<i>Alopecosa solivaga</i> (Kulczyński, 1901)	12♂♀	18♂♀		wmS
<i>Pardosa atrata</i> (Thorell, 1873)	98♂♀	5♂♀		tP
<i>Pardosa eiseni</i> (Thorell, 1875)	45♂♀			tP
<i>Pardosa hyperborea</i> (Thorell, 1872)	85♂♀	45♂♀		wPN
<i>Pardosa indecora</i> L. Koch, 1879	39♂♀	15♂♀		wmS
* <i>Pardosa oljunae</i> Lobanova, 1978	1♀	4♂♀		wS
<i>Pardosa septentrionalis</i> (Westring, 1861)	7♂			tP
<i>Pardosa</i> sp. ¹	3♂	1♂		S
<i>Tricca alpigena</i> (Doleschall, 1852)	4♂♀	3♂		cH
Philodromidae				
<i>Thanatus arcticus</i> Thorell, 1872	5♂♀	2♂		cH

Table 1, continued

	1	2	3	Range
Salticidae				
<i>Dendryphantes</i> sp.	1♀			
<i>Evarcha falcata</i> (Clerck, 1757)			1♀	wP
Tetragnathidae				
<i>Pachygnatha listeri</i> Sundevall, 1830			1♂	tP
<i>Tetragnatha extensa</i> (Linnaeus, 1758)	1♀			cH
Thomisidae				
<i>Misumena vatia</i> (Clerck, 1757)			1j	cH
<i>Ozyptila arctica</i> Kulczyński, 1908	3♂♀	2♂		tPwN
<i>Xysticus albidus</i> Grese, 1909	1♂	3♂		tP
<i>Xysticus britcheri</i> Gertsch, 1934		10♂♀		SN
<i>Xysticus viduus</i> Kulczyński, 1898	5♂♀			wP
Opiliones, Phalangiidae				
<i>Mitopus morio</i> (Fabricius, 1779)	1j			cH

1) Undescribed species.

Pardosa sp.

This is an undescribed species related to *P. lapponica* Thorell, 1872. It occurs throughout Siberia.

3.1.7. Family Salticidae

Dendryphantes sp.

We cannot identify with certainty a single female specimen. Four species of the genus are known in the North and Polar Urals (Esyunin & Efimik 1996) and in Middle Siberia (Eskov 1988).

Evarcha falcata (Clerck, 1757)

The species has a Euro-Baikalian range and is known from France to the Angara River (Logunov & Marusik 2000). The record from Pyakol'ski Zakaznik is the northernmost in Siberia, and extends the previous northernmost record (Sos'va Village, 63°36'N 61°53'E, Logunov & Marusik 2000) about 2° to the North.

3.1.8. Family Tetragnathidae

Pachygnatha listeri Sundevall, 1830

The species has a trans-Palaeartic range. The record from Pyakol'ski Zakaznik is the northernmost in Siberia.

3.1.9. Family Thomisidae

Misumena vatia (Clerck, 1757)

The species has a circum-Holarctic range. The record from Pyakol'ski Zakaznik is the northernmost in Siberia.

Xysticus viduus Kulczyński, 1898

The species has a West Palaeartic range and is known east to the Yenisei River. The record from Messo-Yakhinski Zakaznik is the northernmost in the range.

3.2. Order Opiliones

Family Phalangiidae

Mitopus morio (Fabricius, 1799)

This species has a circum-Holarctic distribution. The present record is the northernmost in Siberia.

4. Conclusions

Altogether 53 species of spiders belonging to 10 families and one species of harvestman have been identified in this study. All species are new to the Gydanski Peninsula. Occurrence of most of the species in the study area was expected, since they are known from the North and Polar Ural as well

as from the northern parts of Middle Siberia. Many present records are of a special zoogeographical interest. For example, for *Araneus marmoreus*, *Cyphepeira silvicultrix*, *Helophora insignis*, *Evarcha falcata*, *Pachygnatha listeri*, *Misumena vatia* and *Mitopus morio* these are the northernmost records in Siberia; for *Clubiona norvegica*, the easternmost locality in Siberia; and for *Oreoneta leviceps*, the southernmost in the Palaearctic. This is northernmost record in the range of *Xysticus viduus*, the westernmost of *Crosbylonia borealis*, and the westernmost and northernmost of *Oreoneta eskovi*. Three species occurring in the Gydansk Peninsula are known exclusively from Western Siberia: *Oreoneta eskovi*, *Pardosa oljunae* and *Thaleria orientalis*; they can be considered endemics of this region. About 30% of the spider species have a circum-Holarctic range, and another 30% are trans-Palaearctic (and trans-Palaearctic-West Nearctic).

As in most northern areas, Linyphiidae (20 species) is the most species-rich spider family (e.g. Koponen 2012), but it seems that the real diversity of this family should be much higher (60 species, or even more). Our estimate is based on the approximation rule that Lycosidae always comprise about 8–10% in each local fauna in the northern Palaearctic region (Marusik & Koponen 2002). Since 11 species of Lycosidae were found, fauna of the region should encompass not less than 110 species. The share of Linyphiidae in all Arctic faunas is over 50% (Marusik & Koponen 2002).

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