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Current knowledge of spider fauna (Araneae) of Yakutia

Современное состояние изученности фауны пауков (Araneae) Якутии

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Abstract. Information on the present composition of the spider (Araneae) fauna in Yakutia is summarized. The species published from Yakutia after the checklist [Marusik et al., 1993] are listed, as well as some nomenclatural changes. Currently the spider fauna comprises 446 species from 20 families; 22 species have been reported as new for the region during the last 20 years, five of them were new for the science. New northernmost records have been found for several species in northern Yakutia.

Резюме. Обобщены сведения о современном составе фауны пауков (Araneae) Якутии. Приведены виды из статей по Якутии, опубликованных после обобщающего списка видов [Marusik et al., 1993], а также некоторые номенклатурные изменения. В настоящее время фауна пауков насчитывает 446 видов из 20 семейств; за последние 20 лет 22 вида представлены как новые для региона, пять из них — новые для науки. В северной Якутии для некоторых видов были указаны самые северные точки распространения.

Spiders is one of the most species-rich arthropod orders; there are now more than 43000 living species belonging to 112 families [Platnick, 2013]. Spiders are widely distributed and, as predators, an important element in all terrestrial ecosystems [e.g. Koponen, 2012]. The first thorough spider fauna of Yakutia, a checklist, was published twenty years ago when data on Yakutian spiders covering a period over a century was presented by Yu. M. Marusik and his co-authors [Marusik et al., 1993]. A remarkable part of this data was based on spider collections by S. Koponen in Central Yakutia, 1977 [Koponen, Marusik, 1992]. According to Marusik et al. [1993], this extensive region of North Asia, with an area over 3 million square kilometers, had a rich spider fauna consisting of 420 species from 19 families (table 1).

Data from intensive inventories on the Yakutian entomofauna, during the first ten years of the 21th century, showed that about 6400 species from 20 orders were found in the area [Bagachanova et al., 2012]. However, information concerning spiders was not included. This work is aimed to fill this gap of knowledge presenting new data published over the 20-year period since the last conclusion of the Yakutian spider fauna [Marusik et al., 1993].

Extrapolating from the data of spider richness in different areas of the northern regions, Koponen [2003] suggested that up to 650 species might inhabit Yakutia. Recent information on spiders collected by the present authors and by other Yakutian entomologists in the river basins of the Yana [Marusik et al., 2001; Koponen et al., 2004] and in the Lena River within the limits of Central Yakutia [Koponen et al., 2004], supports this estimate. So information on distribution of about 150 species from 14 families over the last 20 years has been published, of them 22 species from 8 families (Table 2) were recorded for the first time from Yakutia. Three species found in the environs of the Kular village were described as new for science: *Agyneta yakutsaxatilis* Marusik et Koponen, 2001, *Clubiona kularensis* Marusik et Koponen, 2001, *Poeciloneta yanensis* Marusik et Koponen, 2001 [Marusik et al., 2001]. Already in 1994, Marusik [Logunov, Marusik, 1994] described a new species from the upper Indigirka River: *Xysticus bermani* Marusik, 1994. Recently [Kronestedt, Marusik, 2011] the lycosid «*Pardosa* sp. 3» in Marusik et al. [1993] was described as a new species, *P. eskovi* Kronestedt et Marusik, 2011, based on material from Zhigansk, Lena River.

The published number of spider species known from Yakutia is now 446, although some of them have not yet identified to the species level. Mikhailov [2013] listed species numbers within different physiogeographic areas of Russia. Yakutia (446 species) lies in Middle Sibe-

Table 1. Species and genera abundance in the spider fauna of Yakutia
Таблица 1. Число видов и родов в составе фауны пауков Якутии

Families	Marusik et al., 1993, number of		Current data of spider fauna, number of	
	genera	species	genera	species
Amaurobiidae	1	1	1	1
Araneidae	10	18	10	19
Argyronetidae (Cybaeidae)	1	1	1	1
Clubionidae	2	9	2	11
Dictynidae	4	13	4	13
Dolomedidae	1	1	1	1
Gnaphosidae	7	33	7	34
Hahniidae	1	1	1	1
Heteropodidae (Sparassidae)	1	1	1	1
Linyphiidae	88	200	90	212
Liocraniidae	1	1	1	1
Lycosidae	6	38	7	41
Oxyopidae	1	1	1	1
Philodromidae	4	20	4	21
Salticidae	11	29	13	32
Tetragnathidae	2	5	2	5
Theridiidae	6	18	9	20
Thomisidae	5	26	5	28
Titanoecidae	1	2	1	2
Zoridae	1	1	1	1
Total	154	419	162	446

ria (the western half of Yakutia) and in North-East Siberia (eastern half); and for comparison, the total species number of Middle Siberia is 670 and that of North-East Siberia 410 [Mikhailov, 2013].

The systematic status and nomenclature of some species has changed after publishing the checklist of Yakutian spiders [Marusik et al., 1993]. In this way the name of genus has changed (new combinations) for many species and about ten species have become synonyms of previously described species. Synonyms are: *Gnaphosa proxima* Kulczyński, 1908 (in the 1993 checklist) = *G. gracilior* Kulczyński, 1901; *Eboria holmi* Eskov, 1981 = *Semljicola alticola* (Holm, 1950); *Hybauchenidium prodigiale* (Holm, 1945) = *H. ferrumequinum* (Grube, 1861); *Islandia alata* (Emerton, 1919) = *I. falsifica* (Keyserling, 1886); *Kaestneria anceps* (Kulczyński, 1885) = *K. pullata* (O.P.-Cambridge, 1863); *Pardosa andersoni* Gertsch, 1934 = *P. palustris* (Linnaeus, 1758); *Phlegra fuscipes* Kulczyński, 1891 = *P. cinereofasciata* (Simon, 1868); *Sitticus lineolatus* (Grube, 1861) = *S. ranieri* (Peckham et Peckham, 1909).

Also *Agyneta yakutsaxatilis* Marusik et Koponen, 2001 has been considered as a synonym of *A. amersaxatilis* Saaristo et Koponen, 1998 and *Poeciloneta yanensis* Marusik et Koponen, 2001 as a synonym of *P. variegata* (Blackwall, 1841) [Tanasevitch, 2010], both species are from Kular.

Some names in Marusik et al. [1993] have changed due to a recent description of new species, like: *Dictyna schmidti* Kulczyński, 1926 = *D. palmgreni* Marusik et Fritzén, 2011 [Marusik, Fritzén, 2011]; *Hilaira tatrica tatrica* Kulczyński, 1915 = *Oreoneta magaputo* Saaristo et Marusik, 2004 [Saaristo, Marusik, 2004]; *Maro flavescens* (O.P.-Cambridge, 1873) = *M. pansibiricus* Tanasevitch, 2006 [Tanasevitch, 2006]; *Notiscopus jamalensis* Grese, 1909 = *N. sibiricus* Tanasevitch, 2007 [Tanasevitch, 2007]; *Evarcha falcata* (Clerck, 1757) = *E. proszynskii* Marusik et Logunov, 1998 and *Pellenes cf. tripunctatus* (Walckenaer, 1802) = *P. sibiricus* Logunov et Marusik, 1994 [Logunov, Marusik, 2000]. For changes in nomenclature, see the internet catalogue by Platnick [2013].

Spider materials from northern forest tundra areas, Kular (70°35' N) and Tuostakh River (67°25' N), include many zoogeographically interesting records. The northernmost locality of the range for many species is Kular, e.g. *Clubiona latericia* Kulczyński, 1926, *Drassodes mirus* Platnick et Shadab, 1976, *Gnaphosa nigerrima* L. Koch, 1877, *Haplodrassus hiemalis* Emerton, 1909, *Hilaira syrojeczkowskii* Eskov, 1981, *Hybauchenidium ferrumequinum* (Grube, 1861), *Lasiargus pilipes* (Kulczyñski, 1908), *Oedothorax retusus* (Westring, 1851), *Perregrinus deformis* (Tanasevitch, 1982), *Walckenaeria fraudatrix* Millidge, 1983, *Pardosa atrata* (Thorell, 1873), *P. lapponica* (Thorell, 1872), *P. sodalis* Holm, 1970 and *Xysticus britcheri* Gertsch, 1934 [Marusik et al., 2001]. Tuostakh is the northernmost known locality for *Pardosa lyrata* (Odenwall, 1901), *Pellenes limbatus* Kulczyński, 1895, and *Xysticus austrosibiricus* Logunov et Marusik, 1998 [Koponen et al., 2004].

We have also studied succession of the spider communities in human-influenced, post-techogenic landscapes, clearly differing from natural ones, in the lower reaches of the Yana River. During the first stage in recovery of the vegetation the spider species number was low, during the 2nd and 3rd stages species number increased clearly, sometimes exceeding that in natural biotopes; then numbers stabilized and did not increase during the 4th stage of recovering [Potapova, 2010; Koponen, Potapova, 2010]. Similar effects of human activity, especially of pollution, on the species numbers of spiders in northern areas have been found e.g. in Kola peninsula [Koponen, 2011].

The proportion of Holarctic species in the Yakutian spider fauna is 22 %, i.e. 95 species. This is a high figure, Marusik and Koponen [2005] listed altogether only 133 Holarctic (circum- and subcircum-Holarctic) spider spe-

Table 2. New species of the spider fauna of Yakutia since the checklist [Marusik et al., 1993]
Таблица 2. Новые виды фауны пауков Якутии после опубликования статьи [Marusik et al., 1993]

Species	Collecting areas	Publications	Distribution
Clubionidae			
Clubiona kularensis Marusik et Koponen, 2001	vill. Kular	Marusik et al., 2001	East-Siberian
Clubiona stagnatilis Kulczyński, 1897	Lena River	Koponen et al., 2004	Euro-Baikalian boreo-nemoral
Gnaphosidae			
Zelotes fratris Chamberlin, 1920	Lena River	Koponen et al., 2004	Siberian-Nearctic polyzonal
Linyphiidae			
Agyneta alaskensis (Holm, 1960)	vill. Kular	Marusik et al., 2001	Mongolian-Beringian, arctic
Agyneta yakutsaxatilis Marusik et Koponen, 2001	vill. Kular	Marusik et al., 2001	East-Siberian
Erigone remota L. Koch, 1869	vill. Kular	Marusik et al., 2001	Euro-Baikalian arcto-montane
Hypomma affine Schenkel, 1930	vill. Kular	Marusik et al., 2001	East-Siberian boreo-arctic
Poeciloneta yanensis Marusik et Koponen, 2001	vill. Kular	Marusik et al., 2001	East-Siberian
?Silometopoides pampia (Chamberlin, 1949)	vill. Kular	Marusik et al., 2001	East-Siberian-Nearctic arctic
Walckenaeria korobeinikovi Esyunin et Efimik, 1996	vill. Kular	Marusik et al., 2001	Trans-Siberian polyzonal
Walckenaerianus aimakensis Wunderlich, 1995	Central Yakutia	Marusik et al., 2000	Siberian hypoarcto-nemoral
Wiehlenarius boreus Eskov, 1990	Tuostakh River	Koponen et al., 2004	Beringian hypoarcto-montane
Lycosidae			
Pardosa eskovi Kronestedt et Marusik, 2011	Lena River, Zhigansk	Kronestedt, Marusik, 2011	Middle Siberian
Pardosa jeniseica Eskov et Marusik, 1995	Lena River	Koponen et al., 2004	Trans-Siberian boreo-nemoral
Pardosa podhorskii (Kulczyński, 1907)	vill. Kular	Marusik et al., 2001	East-Siberian-Nearctic arctic
Philodromidae			
Thanatus tuvinensis Logunov, 1996	Oimyakon	Marusik et al., 2004	Siberian boreo-montane
Salticidae			
Dendryphantes czekanowskii Proszynski, 1979	Kolyma Riv. mouth	Logunov, Marusik, 2000	Siberian hypoarcto-montaine
Pellenes gobiensis Schenkel, 1936	Oimyakon	Marusik et al., 2004	Siberian boreo-nemoral (steppe)
Talavera aequipes (O.P.-Cambridge, 1871)	Dyupsya (nr. Byadi)	Logunov, Marusik, 2000	Euro-Siberian, boreo-nemoral
Theridiidae			
Euryopis saukea Levi, 1951	Oimyakon	Marusik et al., 2004	Holarctic boreo-nemoral (steppe)
Thomisidae			
Xysticus austrosibiricus Logunov et Marusik, 1998	Tuostakh River	Koponen et al., 2004	Mongolian-Yakutian boreo-montane
Xysticus bermani Marusik, 1994	Indigirka River	Logunov, Marusik, 1994	East-Siberian

cies; so more than 70 % of all Holarctic species have been observed in Yakutia. Approximate proportions of certain other main distribution types within the Yakutian spider fauna are as follows: about 20 % Siberian, almost 20 % trans-Palaearctic, about 10 % Siberio-Nearctic and almost 10 % Euro-Yakutian (or Euro-Baikalian) species [see also Marusik et al., 2000].

As a conclusion, the spider fauna of Yakutia includes now 446 species from 20 families; the dominating family, Linyphiidae, comprises 212 species (48 % of all species) and 90 genera. Because there are large areas totally unexplored in many parts of Yakutia, the real species number is naturally much higher.

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