

Spiders (Aranei) from Oymyakon, the cold pole of the northern hemisphere (Yakutia, Siberia)

Пауки (Aranei) Оймякона, полюса холода северного полушария (Якутия)

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КЛЮЧЕВЫЕ СЛОВА: Araneae, пауки, фаунистические находки, распространение, Якутия.

ABSTRACT: Fifty-five species of spiders were collected in the Oymyakon area (ca 64.5–65°N, 142–145°E), eastern Yakutia, 2003. The vast majority of species found are boreal and hypoarctic spiders. The material include some steppe species, e.g. *Zelotes baltistanus* Caporiacco, 1935, *Pellenes gobiensis* Schenkel, 1936 and *P. limbatus* Kulczyński, 1895, at the northern limits of their range. *Haplodrassus pugnans* (Simon, 1880), *Micaria lenzi* Bösenberg, 1899, *Philodromus alascensis* Keyserling, 1884, *Chalcoscirtus glacialis sibiricus* Marusik, 1991 and *Xysticus baltistanus* (Caporiacco, 1935) are xerothermic species found here in northern “cold steppes”. Three species, *Euryopis saukeya* Levi, 1951, *Pellenes gobiensis* and *Thanatus tuvinensis* Logunov, 1996 are new to Yakutia. The distribution patterns of the species found as well as of five previously reported species are discussed.

РЕЗЮМЕ: 55 видов пауков зарегистрированы в Оймяконской котловине (~64.5–65°сш 142–145°вд). Подавляющее большинство видов имеет бореальный или гипоарктический ареал. Некоторые из зарегистрированных видов являются степными: *Zelotes baltistanus* Caporiacco, 1935, *Pellenes gobiensis* Schenkel, 1936 and *P. limbatus* Kulczyński, 1895. Их находки в Оймяконе являются самыми северными в ареале. *Haplodrassus pugnans* (Simon, 1880), *Micaria lenzi* Bösenberg, 1899, *Philodromus alascensis* Keyserling, 1884, *Chalcoscirtus glacialis sibiricus* Marusik, 1991 и *Xysticus baltistanus* (Caporiacco, 1935) являются обитателями северных тундростепей. Три вида, *Euryopis saukeya* Levi, 1951, *Pellenes gobiensis* и *Thanatus tuvinensis* Logunov, 1996 являются новыми для Якутии. Обсуждается распространение всех видов найденных в Оймяконской котловине.

Introduction

Yakutia (or Republic of Sakha) is the largest administrative unit of Russia, about 3 100 000 km², consisting of taiga, steppe, forest tundra, tundra and mountain ecosystems. This wide area is reaching from the Amur region to the Arctic Ocean.

The known spider fauna of Yakutia includes nowadays about 435 species. The last check-list of Yakutian spiders is ten years old [Marusik et al., 1993]. The real species number is much higher, because there are large areas almost unstudied, and at least 600–700 species can expect to be found in Yakutia [see Marusik & Koponen, 2002].

The area of Oymyakon, east of the Verhojansky Mountains in eastern Yakutia, is known as the cold pole of the northern Hemisphere. The absolute minimal temperature registered here is –71°C. Our study area is somewhat north of the proper cold pole area of Oymyakon, although the mean minimal temperatures here are almost the same [Handbook of the climate of the Soviet Union, 1967; Alfimov, personal communication]. In the present paper, we are dealing with the spider fauna found in this area, mainly collected in the summer 2003.

Study area, material and methods

The study area is situated in eastern Yakutia, ca 64.5°N, 142.5–145°E (Fig. 1), north of the Oymyakon cold pole site. Weather data for Oymyakon are as follows [after Müller, 1982]: mean daily temperature in January –50.1°C, in July +14.5°C, and yearly mean –16.5°C; absolute maximum +33°C and minimum –71°C.

Material was collected by the author N.P., mainly by pitfall traps and sweep netting. The main collecting areas were:

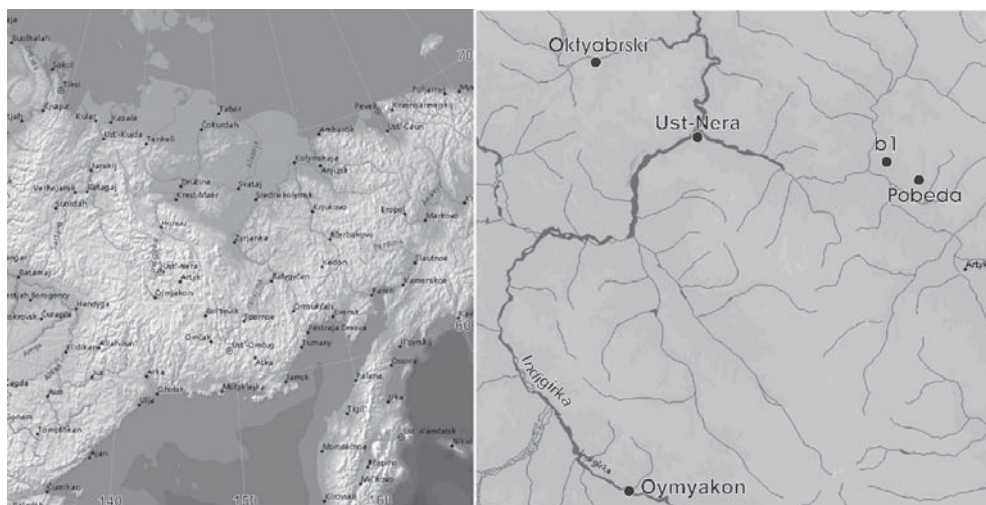


Fig. 1. Location of the study sites in the Oymyakon area.

Рис. 1. Места сборов пауков в Оймяконской долине.

1) Kurung-Asylyk River, right tributary of Burustakh River, mining place Pobeda, 80 km E of Ust-Nera town, 64°27'N, 144°54'E (sites a1–a13),

2) Kurung-Asylyk River, Tagania River, 64°28'N, 144°38'E (site b1),

3) Olchan River, left tributary of Indigirka River, mining place Oktyabrskiy, 80 km NW of Ust-Nera, 64°49'N, 142°32'E (sites c1–c12),

4) Vicinity of Ust-Nera, right bank of Indigirka River, 64°19'N, 143°35'E (sites d1–d10).

Habitats, methods, and date of collecting

1) **Kurung-Asylyk R., Pobeda.** Site a1: 12.07.2003; a2: sweeping *Hordeum jubatum* vegetation, 14.07.2003; a3: from mixed herb vegetation, 14.07.2003; a4: pitfall trap on gravel, mixed herb slope, 16.07.2003; a5: from mixed herb vegetation, 16.07.2003; a6: pitfall trap on foot of fine-gravel mine-hill covered by mixed herbs, 17.07.2003; a7: pitfall trap in larch forest without undergrowth, 17.07.2003; a8: pitfall trap in *Arctagrostis* vegetation, 17.07.2003; a9: pitfall trap in forest clearance, 17.07.2003; a10: pitfall trap in sparse larch forest, 17.07.2003; a11: pitfall trap in larch forest with moss cover and *Vaccinium uliginosum*, 18.07.2003; a12: pitfall trap in mixed herb-Graminaceae glade, 18.07.2003; a13: pitfall trap at burned site in larch forest, 18.07.2003.

2) **Kurung-Asylyk R., Tagania R.** Site b1: from mixed herb vegetation, 14.07.2003.

3) **Olchan R.** Site c1: sweeping Graminaceae-*Carex* vegetation, 22.07.2003; c2: ice-field in river-creek valley bottom, 24.07.2003; c3: pitfall trap in larch forest with moss cover and *Vaccinium vitis-idaea*, 25.07.2003; c4: pitfall trap in *Salix* vegetation with *Chamaenerium angustifolium* and grasses, 25.07.2003; c5: sweeping *C. angustifolium*, 25.07.2003; c6: pitfall trap in *Chosenia-Populus* forest along riverside, 26.07.2003; c7: pitfall trap among moss vegetation in dried temporary pond (with sometimes waste water from mine), 26.07.2003; c8: pitfall trap among mosses and *Hordeum jubatum* in dried temporary pond (sometimes with waste water from mine), 26.07.2003; c9: pitfall trap on (fine) gravelly slope with sparse herb vegetation, 26.07.2003; c10: pitfall trap in sparse herb-willow stand, 26.07.2003; c11: pitfall trap in larch forest with moss and *Vaccinium uliginosum*, 26.07.2003; c12: sweeping *Arctagrostis* vegetation, 26.07.2003.

4) **Ust-Nera.** Site d1: sweeping from *Corydalis sibirica* in burnt area, 30.07.2003; d2: sweeping from *Artemisia* in abandoned agricultural area, 31.07.2003; d3: sweeping from *Beckmannia syzigachne* in abandoned agricultural area, 31.07.2003; d4: pitfall trap in *Artemisia* vegetation in abandoned agricultural area, 02.08.2003; d5: pitfall trap in *Chenopodium album-Polygonum aviculare* association in abandoned agricultural area, 02.08.2003; d6: pitfall trap in *Calamagrostis-Carex* association in abandoned agricultural area, 02.08.2003; d7: pitfall trap in *Chenopodium album* vegetation in abandoned agricultural area, 02.08.2003; d8: pitfall trap in *Hordeum jubatum* vegetation in abandoned agricultural area, 02.08.2003; d9: sweeping from *Carex* in abandoned agricultural area, 03.08.2003; d10: pitfall trap in *Chenopodium album* vegetation in abandoned agricultural area, 04.08.2003.

Material treated herein is deposited in the Zoological Museum, University of Turku, Finland.

Some earlier records, including five additional species, from the Oymyakon area mentioned in the check-list of the Yakutian spiders [Marusik et al., 1993], have been also included. These are marked by an asterisk (*).

List of species

Amaurobiidae

Arctobius agelenoides (Emerton, 1919)

c10: 1 juv.

DISTRIBUTION: This species was found in several localities in Yakutia [Marusik et al., 1993] one of which lies north of 70°N. It has subcircum-Holarctic hypoarcto-boreal range [Marusik et al., 2000] and is distributed from north Scandinavia via whole Siberia southward to Mongolia, northward to Chukotka. In Nearctic it occurs in a western half of Canada (from south to north) and Alaska [Leech, 1972].

Araneidae

Aculepeira packardi (Thorell, 1989)

a1: 2f, c5: 1juv, d1: 1 juv.

DISTRIBUTION: This species was found in several localities in Yakutia [Marusik et al., 1993; Koponen et al.,

2004] one of which lies north of 70°N. It has circum-Holarctic boreo-nemoral range [Marusik et al., 2000]: from North Scandinavia (sub *Araneus lapponicus* Holm, 1945), via Ural southward to Kyrgyzstan, Mongolia and China [Marusik et al., 1996]. The northernmost locality in Palaearctic lies in Olenyok River mouth (73°N).

Larinioides cornutus (Clerck, 1757)

b1: 1f, d2: 1f, d3: 1m.

DISTRIBUTION: This species was found in many localities across whole Yakutia [Marusik et al., 1993] and known north of 70°N. It has circum-Holarctic polyzonal range [Marusik et al., 2000].

Dictynidae

Arctella lapponica Holm, 1945

a11: 1f.

DISTRIBUTION: This species is known at least from four localities in Yakutia [Marusik et al., 1993; Koponen et al., 2004] two of which lies north of the 70°N latitude. It has trans-Palaearctic-NW Nearctic hypoarcto-boreal range [Marusik et al., 2000].

Dictyna major Menge, 1869

a1: 2f, b1: 1m, c7: 1f, d1: 1f, d3: 1f.

DISTRIBUTION: This species is most common and widespread member of the family in Yakutia [cf. Marusik et al., 1993]. One of its localities in Yakutia lies north of the 70°N latitude. It has circum-Holarctic polyzonal range [Marusik et al., 2000].

Gnaphosidae

Drassodes mirus Platnick et Shadab, 1976

a10: 2mf.

DISTRIBUTION: Until the present record this species was known from three localities in Yakutia: Zhigansk, along the Lena River [Marusik et al., 1993], Kular [Marusik et al., 2002] and Tuostach [Koponen et al., 2004] at the Yana River; Kular lies north of 70°N. It has East Siberian-West Nearctic hypoarcto-boreal range and occurs from Lena River to the Rocky Mountains (from Yukon to Colorado) in Nearctic [Dondale et al., 1997].

Gnaphosa borea Kulczyński, 1908

a7: 2m, a9: 8mf, a10: 4m, a11: 11m, a12: 5mf, a13: 4m, c3: 1m, c4: 1f, c10: 2m, c11: 2m.

DISTRIBUTION: This species is known from several localities in Yakutia, including one laying north of 70°N [Marusik et al., 1993, 2002]. It has Siberio-trans-Nearctic hypoarcto-boreal range [Marusik & Koponen, 2001].

Gnaphosa gracilior Kulczyński, 1901

a6: 1f, c: 5f, c8: 2f, c9: f.

DISTRIBUTION: This species is known from several localities in Yakutia, all of which lie south of 68°N [Marusik et al., 1993]. It has Siberian polyzonal range [Marusik et al., 2000].

Gnaphosa microps Holm, 1939

a9: 4m, a10: 4m, a11: 3mf, a12: 2m, a13: 3m, c3: 1m, c10: 4m, c11: 13m.

DISTRIBUTION: This species is known from several localities in Yakutia, including two laying north of 70°N [Marusik et al., 1993, 2002]. It has circum-Holarctic hypoarcto-boreal range [Marusik et al., 2000].

Gnaphosa nigerrima L.Koch, 1878

c10: 1f, d6: 1f.

DISTRIBUTION: This species is known from several localities in Yakutia, including one laying north of 70°N [Marusik et al., 1993, 2002]. It has trans-Palaearctic hypoarcto-boreal range [Marusik et al., 2000].

Haplodrassus hiemalis (Emerton, 1909)

c3: 1m, c10: 1f, c11: 1m.

DISTRIBUTION: This species is known from several localities in Yakutia, including one laying north of 70°N [Marusik et al., 1993, 2002]. It has Siberio-Nearctic hypoarcto-boreal range [Marusik et al., 2000].

Haplodrassus pugnans (Simon, 1880)

a11: 1m.

DISTRIBUTION: Until the present record this species was known from two localities in Yakutia: Zhigansk Town on the Lena River (67°N) and Kolyma River mouth (ca. 69°N) [Marusik et al., 2000]. It has Siberio-Manchurian polyzonal range [Marusik et al., 2000].

Micaria alpina L.Koch, 1872

a11: 1f, a13: 2mf, c3: 2mf, c10: 22mf, c11: mf.

DISTRIBUTION: This species was known from four localities in Yakutia, including one situated north of 70°N [Marusik et al., 1993; Koponen et al., 2004]. It has subcircum-Holarctic hypoarcto-boreal range [Marusik et al., 2000].

Micaria lenzi Bösenberg, 1899

a4: 1f, a6: 2f, a8: 1f, a9: 1f, a12: 1f, a13: 2f, c4: 3f, c10: 9f, c11: 5mf.

DISTRIBUTION: This species is known from several localities in Yakutia, situated south of the 69°N latitude [Marusik et al., 1993]. It has trans-Palaearctic polyzonal (steppe?) range [Marusik et al., 2000].

Micaria rossica Thorell, 1875

a8: 1f, a9: 1f, a10: 1f, a11: 1m, a12: 2f, a13: 3f, c4: 5f, c10: 6f, c11: 3mf.

DISTRIBUTION: This species is known from several localities in Yakutia, laying south of the 69°N latitude [Marusik et al., 1993]. It has trans-Palaearctic-West Nearctic polyzonal range [Marusik et al., 2000].

Micaria tripunctata Holm, 1978

c4: 1f, c10: 1f.

DISTRIBUTION: Before the present record this species was known in a single locality within Yakutia, laying at about the 62°N latitude [Marusik et al., 1993]. It has Trans-Palaearctic-West Nearctic hypoarcto-boreal range [Marusik et al., 2000].

Zelotes baltistanus Caporiacco, 1935

a4: 1f.

DISTRIBUTION: Before the present record this species was known in two localities in Yakutia [Marusik et al., 1993]. The new record is northernmost in the range. *Z. baltistanus* has Central Asian-Siberian (East Palaearctic) polyzonal (steppe) range [Marusik et al., 2000].

Linyphiidae

Agyneta (Agyneta) olivacea Emerton, 1882

a6: 1f, a11: 1f, c3: 7f, c10: 1f, c11: 11f.

DISTRIBUTION: This species is known from several localities in Yakutia, all of which are situated south of the

67°N latitude [Marusik et al., 1993]. It has circum-Holarctic hypoarcto-nemoral range [Marusik et al., 2000].

Ceratinopsis romanus (O.Pickard-Cambridge, 1872)*

DISTRIBUTION: Three localities in Yakutia [Marusik et al., 1993]. It has trans-Palaearctic boreo-nemoral range.

Dactylopisthes video (Chamberlin et Ivie, 1947)

c8: 1f.

DISTRIBUTION: This species was known from five localities in Yakutia, all are south of the 65°N latitude [Marusik et al., 1993; Koponen et al., 2004]. It has Siberio-northeast Nearctic hypoarcto-boreal range [Marusik et al., 2000].

Erigone atra Blackwall, 1883

c7: 1m.

DISTRIBUTION: This species is one of the most widespread members of "Erigoninae" in Yakutia, however no of its records in Yakutia lie north of 67°N [Marusik et al., 1993]. It has circum-Holarctic polyzonal range [Marusik et al., 2000].

Erigone hypoarctica Eskov, 1989

c7: 4m, c8: 5mf, d8: 22mf.

DISTRIBUTION: This species was known from four localities in Yakutia, all of which are situated south of the 68°N latitude [Marusik et al., 1993]. It has Siberian hypoarcto-boreal range [Marusik et al., 2000].

Erigone psychrophila Thorell, 1872

c7: 2mf.

DISTRIBUTION: This species is known from many localities in Yakutia [Marusik et al., 1993, 2002; Koponen et al., 2004] most of which lie north of the 70°N latitude. It has circum-Holarctic arctic range. *E. psychrophila* is one of the two spider species reaching 80°N [Marusik et al., 2000].

Erigonoplus minaretifer Eskov, 1986*

DISTRIBUTION: Three localities in Yakutia, south of 65°N [Marusik et al., 1993]. It has East-Siberian hypoarctic range [Eskov, 1994].

Microlinyphia pusilla (Sundevall, 1829)

c3: 1f.

DISTRIBUTION: This species was collected in about 20 localities all over whole Yakutia, south of 67.5°N [Marusik et al., 1993; Koponen et al., 2004]. It has subcircum-Holarctic polyzonal range [Marusik et al., 2000].

Styloctetor sp.

a13: 1m.

Tmeticus tolli Kulczyński, 1908

c7: 2f, d7: 1f.

DISTRIBUTION: This species is known from several localities in Yakutia [Marusik et al., 1993] two of which above the 70°N latitude. However two northernmost records may refer to sibling *T. nigriceps* (Kulczyński, 1916). *T. tolli* is known east of Yenisey [Eskov, 1994] northeast to Chukotka and southward to Central Mongolia [Marusik & Logunov, 1999], Maritime Province of Russia and northern Sakhalin [Eskov, 1994].

Lycosidae

Alopecosa albostrata (Grube, 1861)

a6: 1m, a7: 1f.

DISTRIBUTION: This species was known from more than 10 localities, some of which lie north of the 70°N

latitude [Marusik et al., 1993]. It has Siberian boreal range [Marusik et al., 2000].

Alopecosa borea (Kulczyński, 1908)

a4: 1f, a11: 1m, a12: 1f, c3: 1f.

DISTRIBUTION: This species is the most widespread member of the genus in Yakutia and one of the most common wolf spiders [Marusik et al., 1993, 2002]. Some of its localities lie north of the 70°N latitude. It seems that *A. borea* has Siberian hypoarcto-boreal range [Marusik et al., 2000].

Alopecosa kulczynski Šternbergs, 1979

c4: 2f, c10: 2f, d6: 1f.

DISTRIBUTION: Until the present record this species was known from four localities in Yakutia [Marusik et al., 1993; Koponen et al., 2004]. It has Siberian boreal range [Marusik et al., 2000].

Alopecosa sibirica (Kulczyński, 1908)

a5: 1m, a7: 1m, c6: 1f.

DISTRIBUTION: This species is known from more than 10 localities in Yakutia [Marusik et al., 1993]. It has Siberian hypoarcto-boreal range [Marusik et al., 2000].

Pardosa adustella (Roewer, 1951)

a8: 2m, c4: 35mf, c8: 1f, c10: 1m, d6: 4f, d7: 2f, d10: 1f.

DISTRIBUTION: This species was known from more than 10 localities in Yakutia south of the 68°N latitude [Marusik et al., 1993]. It has Siberian hypoarcto-nemoral range [Logunov & Marusik, 1995].

Pardosa lapponica Thorell, 1872)

a9: 8m 2f, a10: 42mf, a11: 33mf, a12: 8mf, a13: 29mf, c10: 7mf, c11: 5mf.

DISTRIBUTION: Several localities in Yakutia, northwards to Kular, north of 70°N [Marusik et al., 2002]. It has Holarctic boreo-montane range [Marusik et al., 2000].

Pardosa cf. *prosaica* Chamberlin et Ivie, 1947

a1: 1m, c7: 3f.

DISTRIBUTION: This species was known from four localities in Yakutia [sub *P. groenlandica* (Thorell, 1872), Marusik et al., 1993], one of this records lie north of the 70°N latitude [Marusik et al., 2003]. It seems that it has East Siberian hypoarcto-boreal range [Marusik, 2004].

Pardosa sodalis Holm, 1970

a12: 2m, a13: 1f, c10: 1f, d5: 1f, d6: 35mf, d7: 3f, d8: 2f, d10: 8f.

DISTRIBUTION: This species was known from six localities in Yakutia [Marusik et al., 1993, 2002; Koponen et al., 2004], one of them lies north of the 70°N latitude. It has Siberio-northwestern Nearctic hypoarcto-boreal range [cf. Kronstedt, 1986].

Pardosa tesquorum (Odenwall, 1901)

a6: 11m 2f, a7: 1m, a8: 4mf, a11: 5m, a13: 1m, c2: 1f, c4: 70mf, c6: 21mf, c7: 14mf, c8: 11mf, c9: 2f, c10: 31mf, c11: 2f, d4: 66mf, d5: 7mf, d6: 3f, d7: 9mf, d8: 61mf, d10: 13mf.

DISTRIBUTION: This species is one of the most widespread spiders in Yakutia. It was found in more than 30 localities [Marusik et al., 1993, 2002], only two of which are situated north of 70°N. *P. tesquorum* has trans-Siberio-subtrans-Nearctic hypoarcto-nemoral range [Marusik et al., 2000].

Pardosa tyshchenkoi Zyuzin & Marusik, 1989*

DISTRIBUTION: Two localities only in Yakutia [Marusik et al., 1993]. It has NE Siberian hypoarctic range.

Pirata praedo (Kulczyński, 1885)

d6: 1f, d7: 1f, d10: 2f.

DISTRIBUTION: This species was reported at least from four places in Yakutia [Marusik et al., 1993]. It has Siberian boreal range [Marusik et al., 2000].

Philodromidae

Philodromus alascensis Keyserling, 1884

a6: 3m, a7: 1m, c2: 3f.

DISTRIBUTION: This is a most widespread philodromid species in Yakutia. It was reported from more than 15 localities, three of which are laying north of the 70°N latitude. *P. alascensis* has Siberio-American polyzonal range [Marusik et al., 2000].

Thanatus arcticus Thorell, 1872

a9: 5m, a10: 2mf, a11: 2m, a12: 2m 1f, c10: 1f.

DISTRIBUTION: This species is known from more than 10 localities in Yakutia, few of which are north of the 70°N latitude [Marusik et al., 1993, 2002]. It has circum-Holarctic hypoarcto-boreal range [Marusik et al., 2000].

Thanatus bungei (Kulczyński, 1908)

c2: 10juv, c12: 1f.

DISTRIBUTION: This species is known from more than 10 localities in Yakutia, all of which are south of 69°N latitude [Marusik et al., 1993]. It has Siberio-west Nearctic hypoarcto-boreal range [Marusik et al., 2000].

Thanatus striatus C.L.Koch, 1845

c8: 1f.

DISTRIBUTION: This species was known from four localities in Yakutia [Marusik et al., 1993; Koponen et al., 2004]. It has circum-Holarctic polyzonal range [Marusik et al., 2000].

Thanatus tuvinensis Logunov, 1996

c6: 1f, c9: 1f.

[Logunov, 1996: f. 182–183, 234–241]

DISTRIBUTION: This species is new to the Yakutian fauna. It has Siberian boreal range and occurs from northern Tien-Shang, and Tuva to the upper Kolyma [Logunov, 1996]. The present record is northernmost in the whole range.

Tibellus asiaticus Kulczyński, 1908*

DISTRIBUTION: Seven localities in Yakutia [Marusik et al., 1993; Koponen et al., 2004] of which only one is north of 65°N. It has Siberio-Nearctic boreal range [Marusik et al., 2000].

Salticidae

Chalcoscirtus glacialis sibiricus Marusik, 1991

a4: 1m, c3: 1m.

DISTRIBUTION: This species and subspecies has been known from two localities in northeastern Yakutia [Marusik et al., 1993]. It has northeast Siberio-northwest Nearctic hypoarcto-boreal range [Logunov & Marusik, 1999, 2001].

Pellenes gobiensis Schenkel, 1936

a8: 1f, c6: 1f.

DISTRIBUTION: This species is new to the Yakutian fauna. It has Siberian steppe range [Marusik et al., 2000;

Logunov & Marusik, 2001]. The present record is northernmost in the whole range.

Pellenes limbatus Kulczyński, 1895

a4: 1f.

DISTRIBUTION: This species was known in Yakutia from three localities only [Marusik et al., 1993; Koponen et al., 2004]. It has East Palaearctic boreo-montane range [Logunov & Marusik, 2001].

Sitticus cutleri Prószyński, 1980

c1: 1f.

DISTRIBUTION: This species was reported from Yakutia from four localities [Marusik et al., 1993]. It has Siberio-Nearctic boreal range [Marusik et al., 2000; Logunov & Marusik, 2001].

Tetragnathidae

Pachygnatha clercki Sundevall, 1823

c3: 1juv, c7: 1m, d6: 8mf.

DISTRIBUTION: This species was known from several localities in Yakutia, some of which are north of 70°N [cf. Marusik et al., 1993, 2002]. It has circum-Holarctic polyzonal range [Marusik et al., 2000].

Tetragnatha extensa (Linnaeus, 1758)

a2: 1f, d1: 1m, d3: juv.

DISTRIBUTION: This is one of the most widespread spider species in Yakutia [cf. Marusik et al., 1993]. It has circum-Holarctic polyzonal range [Marusik et al., 2000].

Theridiidae

Euryopsis saukea Levi, 1951

a11: 1m, a13: 2mf, c11: 1m.

DISTRIBUTION: This species is new to the Yakutian fauna. It has circum-Holarctic boreo-nemoral (steppe) range [Marusik et al., 2000].

Steatoda albomaculata (De Geer, 1778)*

DISTRIBUTION: About 10 localities in Yakutia, only one lies north of 65°N [Marusik et al., 1993]. It has Holarctic polyzonal range [Marusik et al., 2000].

Theridion impressum L.Koch, 1881

a1: 1juv, a3: 1m, b1: 1f.

DISTRIBUTION: This species is most widespread member of the family in Yakutia. It has trans-Palaearctic-northwest Nearctic polyzonal range [Marusik et al., 2000].

Theridion petraeum L.Koch, 1872

a3: 1m.

DISTRIBUTION: This species was known from three localities in Yakutia [Marusik et al., 1993]. It has circum-Holarctic boreal range [Marusik et al., 2000].

Thomisidae

Xysticus albidus Grese, 1909

a5: 1m, c4: 1f, c12: 1f, d1: 1f, d2: 1f.

DISTRIBUTION: This species is known from several localities in Yakutia, some of which lay north of the 70°N latitude [Marusik et al., 1993, 2002]. It has trans-Palaearctic hypoarcto-boreal range [Marusik, 2004].

Xysticus baltistanus (Caporiacco, 1935)

a9: 5m, a11: 1m, a12: 2mf, a13: 3m 1f.

DISTRIBUTION: This species was known from at least five in localities in Yakutia [cf. Marusik et al., 1992, 2000; Koponen et al., 2004]. It has east Palaearctic polyzonal range [Marusik et al., 2000].

Xysticus britcheri Gertsch, 1934

a11: 3m, a12: 2m, a13: 1m, c10: 2m, c11: 1m.

DISTRIBUTION: This species was found in more than 10 localities in Yakutia [Marusik et al., 1993, 2002; Koponen et al., 2004], one of which north of 70°N latitude. It has Siberio-trans-Nearctic boreal range [Marusik et al., 2000].

Xysticus emertoni Keyserling, 1880

a12: 1f.

DISTRIBUTION: This species was found in more than 10 localities in Yakutia [Marusik et al., 1993; Koponen et al., 2004]. It has Siberio-trans-Nearctic boreo-nemoral range [Marusik et al., 2000].

Xysticus vachoni Schenkel, 1963

a1: 1m, a9: 5m, a10: 1m, a12: 1m, a13: 3m, c4: 1m, c10: 1m, c11: 2m, c12: 1f, d8: 1m, d9: 1f.

DISTRIBUTION: This species is known from more than 10 localities in Yakutia [Marusik et al., 1993]. It has Siberio-Manchurian boreal range [Marusik et al., 2000].

Titanoecidae*Titanoeca sibirica* L.Koch, 1879

a4: 1m, a7: 8m, a8: 2m, a9: 12m, a11: 4m, a12: 2m, c4: 1m.

DISTRIBUTION: This species is known from several localities in Yakutia [Marusik et al., 1993]. It has trans-Siberian boreal range [Marusik et al., 2000].

Conclusions

Although the spider fauna of the Oymyakon area has not been studied thoroughly, it is possible to conclude that extremely low winter temperatures have no influence on the spider fauna. Contrary, extremely continental climate, and corresponding high ground temperature [cf. Alfimov, 1998] reaching 2600° sum of positive mean daily temperatures (SPMD) allows surviving of several steppe species such as *Zelotes baltistanus*, *Pellenes gobiensis*, *P. limbatus* and *Thanatus tuvinensis*. The Oymyakon area is the northernmost locality for these steppe-dwelling species. All these steppe species are absent in northern Cisokhotia with much warmer winters and colder summers [1400–1600° SPMD, Alfimov, 1998].

Three species, *Euryopis saukeya*, *Pellenes gobiensis* and *Thanatus tuvinensis*, are found for the first time in Yakutia.

Northern species, with mainly hypoarcto-boreal ranges, consist of about a third of the species found. Boreal or widely distributed species comprise also a third of the species. Some species have a mainly steppe range in Central and Eastern Palaearctic and they are reaching their northern limits here; these include *Zelotes baltistanus*, *Pellenes gobiensis*, *P. limbatus* and probably *Tha-*

natus tuvinensis. A special group are xerothermic (or perhaps “cold steppe”) species, *Haplodrassus pugnans*, *Micaria lentzi*, *Erigonoplus minaretifer*, *Philodromus alascensis*, *Chalcoscirtus glacialis sibiricus* and *Xysticus baltistanus*.

The most species-rich families in the present samples were Gnaphosidae (12 species or 21.8%), Lycosidae (10 species, 18.2%) and Linyphiidae (8 species, 14.5%). These figures demonstrate that the collecting has been selective. The proportion of Linyphiidae in well-studied faunas at the same latitudes varies normally between 50 and 60 percentages [cf. Marusik et al., 2002].

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References

- Alfimov A.V. 1998. Using the data on climate continentality to estimate the heat supply of soil // Eurasian Soil Science. Vol.31. No.6. P.605–608.
- Dondale C.D., Redner J.H. & Marusik Yu.M. 1997. Spiders (Araneae) of the Yukon // Danks H.V., Downes J.A. (eds.). Insects of the Yukon. Ottawa: Biological Survey of Canada. P.73–113.
- Eskov K.Yu. 1994. Catalogue of linyphiid spiders of northern Asia (Arachnida, Araneae, Linyphiidae). Sofia-Moscow: PEN-SOFT Publ. 144 pp.
- [Handbook of the climate of the Soviet Union]. 1967. No.24. Leningrad: Gidrometeoizdat [in Russian].
- Koponen S., Marusik Yu.M. & Potapova N.K. 2004. Spiders (Araneae) from the Lena and Yana Rivers, Yakutia (Sakha Republic) // Entomol. Fennica (in press)
- Kronstedt T. 1986. Studies on species of Holarctic *Pardosa* groups (Araneae, Lycosidae). III. Redescriptions of *Pardosa algens* (Kulczyński), *P. septentrionalis* (Westring), and *P. sodalis* Holm // Entomologica scand. Vol.17. P.215–234.
- Leech R.E. 1972. A revision of the Nearctic Amaurobiidae (Arachnida: Araneida) // Mem. Ent. Soc. Canada Vol.84. P.1–187.
- Logunov D.V. 1996. A critical review of the genera *Apollophanes* O.P.-Cambridge, 1898 and *Thanatus* C.L. Koch, 1837 in North Asia (Araneae, Philodromidae) // Revue Arachnol. T.11. Fasc.13. P.133–202.
- Logunov D.V. & Marusik Yu.M. 1995. Spiders of the family Lycosidae (Aranei) from the Sokhondo Reserve (Chita Area, East Siberia) // Beitr. Araneol. Bd.4. P.109–122.
- Logunov D.V. & Marusik Yu.M. 1999. A brief review of the genus *Chalcoscirtus* Bertkau, 1880 in the fauna of Central Asia and the Caucasus (Araneae, Salticidae) // Arthropoda Selecta Vol.7. No.3. P.205–226.
- Logunov D.V., Marusik Yu.M. 2001. Catalogue of the jumping spiders of northern Asia (Arachnida, Araneae, Salticidae). Moscow: KMK Scientific Press Ltd. 299 pp.
- Marusik Yu.M. 2004. Arachnids (Arachnida: Aranei, Opiliones) of northern Cisokhotia // Euroasian Entomol. J. (in press)
- Marusik Yu.M. & Koponen S. 2001. Description of a new species and new records of some species of the genus *Gnaphosa* (Araneae: Gnaphosidae) from east Palaearctic // Acta Arachnol. Vol.50. No.2. P.135–144.
- Marusik Yu.M. & Koponen S. 2002. Diversity of spiders in boreal and arctic zones // J. Arachnol. Vol.30. No.2. P.205–210.
- Marusik Yu.M. & Logunov D.V. 1999. On the spiders (Aranei) collected in Mongolia during a joint American-Mongolian-Russian expedition in 1997 // Arthropoda Selecta Vol.7. No.3. P.233–254.

- Marusik Yu.M., Eskov K. Yu., Koponen S. & Vinokurov N.N. 1993. A check-list of the spiders (Aranei) of Yakutia, Siberia // *Arthropoda Selecta* Vol.2. No.2. P.63–79.
- Marusik Yu.M., Hippa H. & Koponen S. 1996. Spiders (Araneae) from the Altai area, Southern Siberia // *Acta Zool. Fennica* Vol.201. P.11–45.
- Marusik Yu.M., Koponen S., Vinokurov N.N. & Nogovitsyna S.N. 2002. Spiders (Aranei) from northernmost forest-tundra of northeastern Yakutia (70°35'N, 134°34'E) with description of three new species // *Arthropoda Selecta* Vol.10 (for 2001). No.4. P.351–370.
- Marusik Yu.M., Logunov D.V. & Koponen S. 2000. Spiders of Tuva, South Siberia. Magadan: IBPN FEB RAS. 252 pp.
- Müller M.J. 1982. Selected climatic data for a global set of standard stations for vegetation science. The Hague: Dr W. Junk Publishers. 306 pp.