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Spiders (Aranei) from northernmost forest-tundra of northeastern Yakutia (70°35'N, 134°34'E) with description of three new species

Пауки (Aranei) северной лесотундры северо-восточной Якутии (70°35'N, 134°34'E), с описанием трех новых видов

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КЛЮЧЕВЫЕ СЛОВА: Якутия. пауки, новые виды, лесотундра, биотопическое распределение.

ABSTRACT: Sixty-two species of spiders were found in northern forest-tundra area at Kular, 70°35'N, northeastern Yakutia. Habitat requirements and typical species for different stages of succession after anthropogenic damage are briefly discussed, and the possible total number of species of the site estimated. Three new species are described*: Clubiona kularensis* Marusik & Koponen*, Poeciloneta yanensis* Marusik & Koponen, sp.n. and *Agyneta yakutsaxatilis* Marusik & Koponen, sp.n., and diagnostic figures are given for *Agyneta amersaxatilis* Saaristo & Koponen, 1998, *A. brusnewi* (Kulczyński, 1908), *A. reparіensis* Tanasevitch, 1984, *Poeciloneta variegata* (Blackwall, 1841) and *Praestigia groenlandica* Holm, 1967. Three species are reported from Yakutia for the first time.

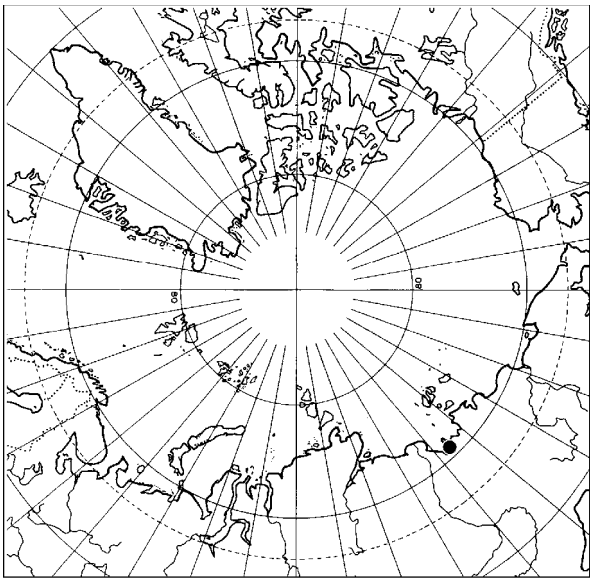
РЕЗЮМЕ: В северной лесотундре в низовьях реки Яна (70°35'с.ш.) на северо-востоке Якутии обнаружено 62 вида пауков. Обсуждается биотопическое распределение и спектр наиболее характерных видов в разных местообитаниях, находящихся на разных стадиях постантропогенной сукцессии. Описывается три новых вида — *Clubiona kularensis* Marusik & Koponen*, Poeciloneta yanensis* Marusik & Koponen, sp.n. и *Agyneta yakutsaxatilis* Marusik & Koponen, sp.n., приводится иллюстрированное переописание*Agyneta amersaxatilis* Saaristo & Koponen, 1998, *A. brusnewi* (Kulczyński, 1908), *A. reparіensis* Tanasevitch, 1984, *Poeciloneta variegata* (Blackwall, 1841) и*Praestigia groenlandica* Holm, 1967. Три вида впервые отмечены для фауны Якутии.

Introduction

Spiders and animals in general, living in the Arctic attract much attention, due to their possibility to tolerate severe conditions: short vegetation period, long winter and low winter temperature [e.g. Danks, 1981]. There are rather few publications describing fauna of spiders living north of the Arctic Circle. The investigated localities include in Northern Europe e.g. Torneträsk in North Sweden [Holm, 1950], Kilpisjärvi [Palmgren, 1972] and Kevo [Koponen, 1977] in Finnish Lapland, Svalbard or Spitsbergen [Holm, 1958; Koponen, 1980]; in Russia e.g. Polar Urals [Tanasevitch, 1985; Koponen et al., 1998], Novaya Zemlya [Dahl, 1928; Holm 1973], Taimyr [Eskov, 1986]; Wrangel Isl. [Khrulyova, 1987], Chukotka Peninsula [Marusik, 1993]; and in the Nearctic region e.g. Ellesmere [Leech, 1966], Devon [Leech & Ryan, 1972] and Bathurst Islands [Danks & Byers, 1972], and Northern Greenland [Braendegaard, 1940].

Only some of these studies are devoted to Arctic arachnids living north of 70°N. Among these papers more or less local (several 100 sq. km) faunas are described for: Wrangel Isl. [from 70.79° to 71.69°N, 44 species; Khrulyova, 1987; Marusik et al, 1992], Isfjord in Svalbard [78°N, 14 species; Koponen, 1996], Novaya Zemlya (70–77°N, 21 species), Hazen Camp in Ellesmere Island [81°49'N, 13 species; Leech, 1966], Devon Island [74.4° to 76.9°N, 8 species; Leech & Ryan 1972].

Occasional collecting have been carried out in different parts of the Arctic belt such as Taimyr and Yamal Peninsulas, Lena River mouth part, Point Barrow in



Map 1. Position of Kular Village within the Arctic.
Карта 1. Географические положение пос. Кулар.

Alaska, and several sites on Canadian arctic coasts but none of these places were surveyed to study the total spider fauna.

Recently we obtain possibility to study spiders above the 70°N latitude in northeastern Yakutia near Kular Village, downstream of theYana River (Map 1). Unlike other places in the Arctic with known arachnofaunas this area belongs not to the tundra zone, but to the northern taiga and most of material treated herein have been collected in thin larch forest communities or in sites earlier occupied with forest. To our surprise number of species found in environs of Kular was rather high in comparison with many other northern faunas. The main goal of this paper is to describe one of the northernmost forest-tundra fauna as well as new species found there, and to discuss briefly the succession of spider fauna after anthropogenic activity (cutting of trees and mining).

The first and most important contribution to the spiders of this area was made byKulczyński[1908] who described more than a dozen of spiders from the Yana River down and middle flow.

Material and methods

Spiders treated in this study were collected in June-July 1996 and in July 17–August 2, 2000 in the environs of Kular Settlement of Ust'-Yana Ulus (ulus is a smallest administrative unit in Yakutia equivalent to district or county); 70°35'N, 134°34'E. Material was collected by different methods such as pitfall traps (altogether 3 600 trap-days in 1996 and 750 in 2000), 11 square samples and 26 samples by sweeping vegetation. Total number of spiders collected and examined was about 6 700 specimens in 1996 and 1 100 in 2000. Pitfall trapping was arranged in the following way: plastic jars of 0.5 l with salt water as fixative were put in series of 10 traps, each about 1.0–1.5 m apart from the other. Traps were checked in interval of 5–10 days. All material was collected in order to study succession of invertebrate mesofauna of anthropogenic landscapes (after mining) in the forest-tundra zone of northeastern Yakutia. Spiders were collected by Ms. S.N. Nogovitsyna in 1996 and by Dr. N.K. Potapova in 2000. Plant communities have been named by Dr. V.I. Zakharova.

Majority of specimens have been collected in special sites for monitoring changes of the plant successions. These sites were chosen by experts from the Laboratory of Mountain and Subarctic Ecosystems of the Yakutian Institute of Biology in 1994 on the left and right banks of the Burguat Creek near Kular Village. Of 16 monitoring sites 12 were chosen to study of epigeic invertebrates. Two sites represented natural ecosystems (tundra-forest and mountain tundra). All other sites had damaged plant cover and were on different stages of succession. Brief description of sampling sites is given below.

I. Thin larch forest near tundra

MK 10. Sparse (thin) larch (*Larix*) forest with bushes, cotton grass (*Eriophorum*), moss and lichens. North exposed gently sloping site.

MK 9. 30 years old clear-cutting area in thin larch forest. Down part of the slope.

MK 4. 25–30 years old succession of burnt thin larch forest.

II. Mountain tundra with bushes, moss and lichens

No number. Undisturbed site in natural condition. Used as a control.

III. Anthropogenic treeless sites in different stages of succession

1st stage. Most strongly disturbed places, without vegetation.

MK 6 (in 1996). Top of gravel mine dump (heap) (only 11 juvenile spiders)

MK 6a (in 2000). Gravely spot with sparse grass-green moss communities with fireweed (*Epilobium angustifolium*), campion (*Silene*) and chamomile (*Chamomilla*).

MK 6b (in 2000). Gravely slope of the mine dump with sparse grass-herb vegetation.

2nd stage. 3–10 years old succession, but vegetation represented by one species (monospecies) herb communities.

MK 1. *Sisymbrium* sp. (anthropogenic association on top of a 10 years old mine dump (1996), after 5 years community turned into *Poa-Equisetum*-liverwort (*Marchantia*) association.

MK 16 (in 2000). Bed of the 5–6 years old sump (mine-sewage reservoir), with grass-herb-*Puccinellia*-moss community.

3rd stage. Succession on more mature stage than 2nd, vegetation composed with different herbs.

MK 3. Shore part of drying up sump (mine-sewage reservoir), *Senecio* anthropogenic 10 years old association (1996) and grass-herb-liverwort community (2000).

MK 5. Grass-*Equisetum pratense* anthropogenic association on down part of hump-hollow SE exposed slope, ca 20 years.

MK 7. *Arctagrostis* (polargrass) anthropogenic meadow in the place of a former mine (10 years succession), slope of fine gravel dump (1996). In 2000 this community was turned into grass-herb-polargrass meadow.

MK 8. Herb-grass anthropogenic community. 10 years succession on the top of clayed soil-gravely dump (1996). After 5 years turned into polargrass-herb-grass-moss community.

MK 11. *Puccinellia* anthropogenic meadow. 10 years old mine, dump slope (1996). After 5 years vegetation was represented with fireweed-*Equisetum*-moss community.

MK 17(2000)**.** Bed of the old sump (mine-sewage reservoir) with *Becmannia*-cotton grass bog with grass-herb vegetation.

IV. 20–30 years old succession, dominated with *Poa* (meadow-grass)

MK 15. Anthropogenic *Poa* meadow (1996). In 2000 this site had *Poa*-cotton grass-*Equisetum*-moss vegetation.

Material treated herein has been shared between the following museums and collections: Institute for Biological Problems of the North, Magadan (IBPN), Manchester Museum, University of Manchester (MMUM), Naturhistoriska Riksmuseet Stockholm (NRS); Zoological Museum of Moscow State University (ZMMU), Zoological Museum, University of Turku (ZMUT), Jörg Wunderlich's personal collection, Straubenhardt (JWC) and Institute of Biological Problems of the Cryolithozone, Yakutsk (IBPC).

The northernmost species records are marked with *, and new species records for Yakutia are indicated by ".

Survey of species

ARANEIDAE (3)

Aculepeira packardi (Thorell, 1989)
MATERIAL EXAMINED: 1 juv.
COMMENTS. This species has circum-Holarctic boreo-nemoral range and its northernmost record lies in Olenyok River mouth (73°N) [Marusik et al., 2000].

Araniella sp.
MATERIAL EXAMINED: 1 juv.
COMMENTS. The specimen from Kular may belong to *A. displicata* (Hentz, 1847), the northernmost representative of the genus.

Larinioides cornutus (Clerck, 1758)
MATERIAL EXAMINED: 1 ♀.
COMMENTS. The northernmost locality of the range lays in eastern Taimyr (ca. 72°35'N [Eskov, 1985]).

CLUBIONIDAE (2)

Clubiona latericia Kulczyński, 1926*
MATERIAL EXAMINED: 1 ♀.
COMMENTS. This new record extends the known range about 1° to the north (Kolyma River mouth [Marusik et al., 1993]).

Clubiona kularensis Marusik & Koponen, sp.n.
MATERIAL EXAMINED: 3 ♂♂1 ♀.
COMMENTS. Description of this species is given below.

DICTYNIDAE (1)

Arctella lapponica (Holm, 1945)
MATERIAL EXAMINED: 54 ♂♂ ♀♀.
COMMENTS. This species is known from Lena River Delta (about 72°15'N [Marusik et al., 1993]).

GNAPHOSIDAE (5)

Drassodes mirus Platnick & Shadab, 1976*
MATERIAL EXAMINED: 2 ♂♂.
COMMENTS. Second record in Yakutia. The new record extends the known range about 2° to the north (Bolshaya Osinovaya River upper flow [Marusik et al., 1992]).

Gnaphosa microps Holm, 1939
MATERIAL EXAMINED: 9 ♂♂ ♀♀
COMMENTS. This species is known from Lena River Delta (about 72°15'N [Marusik et al., 1993]).

Gnaphosa nigerrima L.Koch, 1878*
MATERIAL EXAMINED: 2 ♂♂.
COMMENTS. The new record extends the known range more than 2° to the north (Chaun Bay [Marusik et al., 1992]).

Gnaphosa sticta Kulczyński, 1908
MATERIAL EXAMINED: 4 ♂♂ ♀♀.
COMMENTS. Yana River down flow is the type locality of this species.

Haplodrassus hiemalis (Emerton, 1909)*
MATERIAL EXAMINED: 6 ♂♂ 10 ♀♀.
COMMENTS. The new record extends the known range more than 1° to the north (Chaun Bay [Marusik et al., 1992]). Most probably the record of *H. cognatus* (Westring, 1861) from Novaya Zemlya [Dahl, 1928] refers to this species. So, it seems that the northern limit of distribution have to be turned more to the north.

LINYPHIIDAE (33)

Agyneta alaskensis (Holm, 1960)
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The northernmost locality of this species lies in Wrangel Island (ca. 71°20'N [Marusik et al., 1992]).

Agyneta brusnewi (Kulczyński, 1908)
MATERIAL EXAMINED: 1 ♂.
COMMENTS. This species was described from Burkhaya Bay, which is slightly northwest of Kular Vill.

Agyneta ripariensis Tanasevitch, 1984
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The northernmost locality of this species lies in Taimyr (ca. 72.50°N [Eskov & Marusik, 1994]).

Agyneta yakutsaxatilis Marusik & Koponen, sp.n.
MATERIAL EXAMINED: 7 ♂♂ 1 ♀.
COMMENTS. See description below.

Bathyphantes humilis (L.Koch, 1879)
MATERIAL EXAMINED: 3 ♂♂ 2 ♀♀.
COMMENTS. This record coincides with the known northernmost record of this species (Kresty in western Taimyr [Eskov, 1985]).

Collinsia holmgreni (Thorell, 1872)
MATERIAL EXAMINED: 11 ♂♂ ♀♀.
COMMENTS. Known from Novosibirskiye Isles (ca. 75°N), Spitsbergen and other extreme north localities [Eskov, 1994].

Erigone arctica sibirica Kulczyński, 1908
MATERIAL EXAMINED: >570 ♂♂ ♀♀.
COMMENTS. Described from Yana River down flow, but known also from Lyakhovskiye and Novosibirskiye Isles (ca. 75°N [Marusik et al., 1993]).

Erigone remota L. Koch, 1869"
MATERIAL EXAMINED: ♂♂ ♀♀.
COMMENTS. Kular is the easternmost known locality for the species and first in Yakutia. *E. remota* was earlier known within Siberia in Novaya Zemlya, Taimyr and Tuva [Eskov, 1994].

Erigone psychrophila Thorell, 1872
MATERIAL EXAMINED: 1 ♂.
COMMENTS. It is the northernmost spider species known from Severnaya Zemlya (ca 80°N) [Marusik, 1988]. Although it is very common in tundra and north taiga zones, only a single male was found in Kular Vill.

Erigone tirolensis L.Koch, 1872
MATERIAL EXAMINED: 306 ♂♂ ♀♀.
COMMENTS. Known from Spitsbergen and other extreme north areas [Eskov, 1994].

Hilaira asiatica Eskov, 1987
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The new locality coincides with the northernmost record of this species in Lena River Delta [Marusik et al., 1993).

Hilaira glacialis (Thorell, 1872) ?
MATERIAL EXAMINED: 1 ♀.
COMMENTS. Known from Spitsbergen and other extreme north areas [Eskov, 1994].

Hilaira herniosa (Thorell, 1875)
MATERIAL EXAMINED: 3 ♂♀.
COMMENTS. Known from Lena River Delta (72°15'N [Marusik et al., 1993]).

Hilaira incondita (L.Koch, 1879)
MATERIAL EXAMINED: 360 ♂♂ ♀♀.
COMMENTS. Known from western Taimyr (ca. 72°30'N [Eskov, 1985]).

Hilaira leviceps (L. Koch, 1879)
MATERIAL EXAMINED: 18 ♂♂ ♀♀.
COMMENTS. This species is known through the whole tundra zone of Asia and north-western Alaska [Eskov, 1994]. The northernmost localities lie in Wrangel Island and Taimyr Peninsula [cf. Eskov, 1994].

Hilaira syrojeczkowskii Eskov, 1981*
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The new locality extends northern limit of distribution (Norilsk, ca. 69°N, [Eskov, 1988]) about 1°30' to the north.

Hybauchenidium aquilonare (L.Koch, 1879)
MATERIAL EXAMINED: 1 ♂14 ♀♀.
COMMENTS. Known from more northern latitudes such as Wrangel, Novosibirskiye Islands, NE Taimyr up to 75°N [Eskov, 1985; Marusik et al., 1992, 1993].

Hybauchenidium ferrumequinum (Grube, 1861)*
MATERIAL EXAMINED: 4 ♀♀.
COMMENTS. This new find extends the known range more than 3° to the north (*contra* about 67° in Bolshaya Osinovaya River upper flow [Marusik et al., 1992]).

Hypomma affine Schenkel, 1930*"
MATERIAL EXAMINED: 1 ♂.
COMMENTS. This species is known to be distributed in Far North(?)-East Asia (Kamchatka, Sakhalin Area and Hokkaido cf. Eskov, 1994). So, Kular is the north-westernmost locality for *H. affine.*

Islandiana falsifica (Keyserling, 1886)
MATERIAL EXAMINED: 2 ♂♂.
COMMENTS. Known from Wrangel Island [Marusik et al., 1992] that is slightly more north than Kular Village.

Lasiargus pilipes (Kulczyński, 1908)*
MATERIAL EXAMINED: 2 ♂♂.
COMMENTS. The new find extends the known range about 3° to the north (*contra* type locality, Yana River middle flow 67°50'N).

Mecynargus paetulus (O.Pickard-Cambridge, 1875)
MATERIAL EXAMINED: 18 ♂♂ ♀♀.
COMMENTS. The latitude of Kular coincides with the previously known record from Kusyur [Marusik et al., 1993].

Mecynargus tungusicus (Eskov, 1981)
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The latitude of Kular coincides with the previously known record from Kusyur [Marusik et al., 1993].

Oedothorax retusus (Westring, 1851)*
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The new record extends the known range about 1° to the north (*contra* Norilsk [Eskov, 1988]) and 12° to the east (*contra* Lena River middle flow [Marusik et al., 1993]).

Pelecopsis parallela (Wider, 1934)
MATERIAL EXAMINED: 51 ♂♂ ♀♀.
COMMENTS. Known from Novaya Zemlya and Wrangel Island [Eskov, 1985]. Although this species is known from nemoral and artic zones and it seems to have a disjunction in boreal zone, we were not able to find any differences between southern (southern Finland) and northern populations.

Perregrinus deformis (Tanasevitch, 1982)*
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The new find extends the known range more than 1° to the north (*contra* Ayan Lake [Eskov, 1988]).

Poeciloneta yanensis Marusik & Koponen, sp.n.
MATERIAL EXAMINED: 1 ♂.
COMMENTS. See species description.

Praestigia groenlandica Holm, 1967
MATERIAL EXAMINED: 256 ♂♂ ♀♀.
COMMENTS. This species was already recorded from Yana River down flow [Marusik et al., 1993]. The northernmost localities of the range are Khatanga (ca. 72°20'N [Eskov, 1985] and Wrangel Island (ca. 71°10'N [Marusik et al., 1992]).

Semljicola alticola (Holm, 1950)*
MATERIAL EXAMINED: 1 ♂ 1 ♀.
COMMENTS. The new record slightly extends (about 1°) the northern limit of distribution of this species. The previously known northernmost records are from Lapland (Finland) and Konkovaya River in eastern Yakutia [Saaristo & Eskov, 1996].

Silometopoides pampia (Chamberlin, 1948)
MATERIAL EXAMINED: 3 ♀♀.
COMMENTS. Population from Kular may belong to sibling *S. sphagnicola* Eskov & Marusik, 1992 but the lack of males does not allow us to verify this suggestion.

Tmeticus tolli Kulczyński, 1908
MATERIAL EXAMINED: 3 ♂♂ 6 ♀♀.
COMMENTS. It was described almost from the same area but a few minutes more to the north. The northernmost locality of this species is in Taimyr (ca. 72°30'N, Eskov & Marusik, 1994).

Walckenaeria fraudatrix Millidge, 1983*
MATERIAL EXAMINED: 1 ♂.
COMMENTS. The new record extends the northern limit of distribution about 4° (*contra* 66°20'N in Kresta Bay [Marusik et al., 1992]).

Walckenaeria korobeinikovi Esyunin & Efimik, 1996
MATERIAL EXAMINED: 3 ♂♂.
COMMENTS. Exact northern limit of the range is uncertain because earlier this species was confused with *W. clavicornis* (Emerton, 1882). But the records of *W. clavicornis* [Marusik et al., 1993] from Lena River Delta (ca. 71°10'N) probably refer to this species.

LYCOSIDAE (11)

Alopecosa borea (Kulczyński, 1908)
MATERIAL EXAMINED: 91 ♂♂ ♀♀.
COMMENTS. It was described from Yana River middle flow but known up to the Lena River Delta [Marusik et al., 1993].

Pardosa algens (Kulczyński, 1908)
MATERIAL EXAMINED: 29 ♂♂ ♀♀.
COMMENTS. The northernmost localities of this species are Wrangel Island (71°N) in Palaearctic and Baffin Island (72°30'N) in Nearctic [Kronestedt, 1986].

Pardosa atrata (Thorell, 1873)*
MATERIAL EXAMINED: 1 ♂.
COMMENTS. Until this record the northernmost point of distribution of this species in Siberia was Srednekolymsk Town (ca. 67°30'N [Marusik et al., 1993]). So by now the range extends about 3° to the north.

Pardosa eiseni (Thorell, 1875)
MATERIAL EXAMINED: 107 ♂♂ ♀♀.
COMMENTS. The northernmost locality of this species is Tiksi Town [Marusik et al., 1993] which is about 72°N.

Pardosa lapponica (Thorell, 1872)*
MATERIAL EXAMINED: 288 ♂♂ ♀♀.
COMMENTS. The new find exceeds the northernmost record of this species in Siberia, namely Ayan Lake (69° [Eskov, 1988]) by more than 1°.

Pardosa podhorskii (Kulczyński, 1907)*"
MATERIAL EXAMINED: 1631 ♂♂ ♀♀.
COMMENTS. This is a new species for the Yakutian fauna. Our new find exceeds the westernmost known record, namely Chaun Bay (170°E [Marusik et al., 1992]) over 35°. Even if to count unpublished record of this species from environs of Magadan (150°E) [Marusik & Koponen, 2002a], the new point lays over 15° to the west. Kular is also the northernmost locality of the range. Two other northernmost localities (Chaun Bay, ca. 68°45'N and Victoria Island, ca. 70°N, Dondale & Redner [1990]) are lying slightly more to the south.

Pardosa aff. *prosaica* Chamberlin & Ivie, 1947
MATERIAL EXAMINED: 5 ♂♂ ♀♀.
COMMENTS. The new find coincides with other northernmost records of this species (sub *P. groenlandica* (Thorell, 1872) in north Yakutia [Marusik et al., 1993]. *P. prosaica* was recorded from eastern Siberia [Dondale, 1999], but the Siberian population is probably not conspecific with the Alaskan.

Pardosa septentrionalis (Westring, 1861)
MATERIAL EXAMINED: 126 ♂♂ ♀♀.
COMMENTS. This species was recorded from more northern areas such as Sellyakh Bay (71°30'N) and Lena River Delta (71°30'N [Marusik et al., 1993]).

Pardosa sodalis Holm, 1970*
MATERIAL EXAMINED: 411 ♂♂ ♀♀.
COMMENTS. The new record extends the known northern limit of distribution more than 1° to the north (*contra* Chaun Bay, 68°45'N, Marusik et al., 1992 and Involuted Hills in Northwest Territories, 69°28'N [Kronestedt, 1986]).

Pardosa tesquorum (Odenwall, 1901)
MATERIAL EXAMINED: 39 ♂♂ ♀♀.
COMMENTS. The new record coincides with other northernmost points in Siberia, while lays more south in comparison with Point Barrow, Alaska (1°16'N [Dondale & Redner, 1990]).

Tricca alpigena (Doleschall, 1852)
MATERIAL EXAMINED: 42 ♂♂ ♀♀.
COMMENTS. The known northernmost points of this species are in Lena River Delta and western Greenland (ca 72°N [Dondale & Redner, 1990; Marusik et al., 1993]).

PHILODROMIDAE (1)

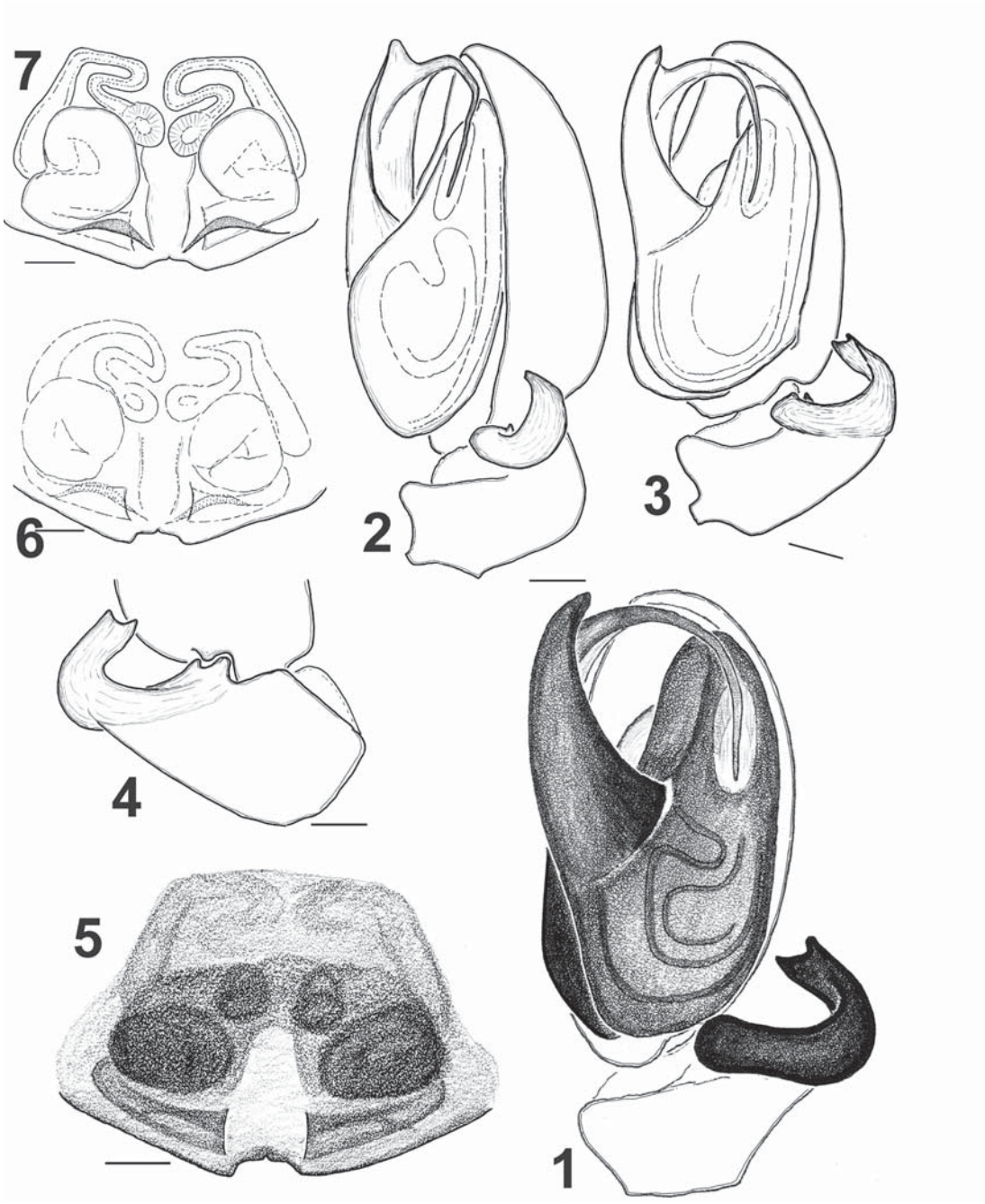
Thanatus arcticus Thorell, 1872
MATERIAL EXAMINED: 24 ♂♂ ♀♀.
COMMENTS. This species is known up to Tiksi (72°N, [Marusik et al., 1993]).

TETRAGNATHIDAE (1)

Pachygnatha clercki Sundevall, 1823
MATERIAL EXAMINED: 397 ♂♂ ♀♀.
COMMENTS. This species is known up to Kharaulakh mountains (about 71°N [Marusik et al., 1993]).

THERIDIIDAE (1)

Theridion sp.
MATERIAL EXAMINED: 1 juv.
COMMENTS. No *Theridion* species is know from so northern latitudes, the single representative of Theridiidae above 70°N is *Thymoites oleatus* (L. Koch, 1879), but the pattern of a single subadult male from Kular is different from highly characteristic pattern of northern *Thymoites.*



Figs. 1–7. Copulatory organs of *Clubiona kularensis* sp.n. (paratypes): 1 — palp, ventral view; 2 — palp, retrolateral view; 3 — palp, ventro-prolateral view; 4 — palpal tibia and part of cymbium, dorso-prolateral view; 5–6 — epigyne, ventral view, in reflecting and transmitting light, respectively; 7 — epigyne, dorsal view. Scale = 0.1 mm.

Рис. 1–7. Копулятивные органы *Clubiona kularensis* sp.n. (паратипы): 1 — пальпа снизу; 2 — пальпа ретролатерально; 3 — пальпа вентро-пролатерально; 4 — голень пальпы и часть цимбиума дорзо-пролатерально; 5–6 — эпигина, вид снизу, в отраженном и проходящем свете; 7 — эпигина сверху. Масштаб 0,1 мм.

THOMISIDAE (4)

Ozyptila arctica Kulczyński, 1908
MATERIAL EXAMINED: 49 ♂♂ ♀♀.
COMMENTS. Known up to Lena River Delta (ca. 72°N [Marusik et al., 1993]).

Xysticus albidus Grese, 1909
MATERIAL EXAMINED: 9 ♂♂ ♀♀.
COMMENTS. Known up to Lena River Delta (ca. 72°N, [Marusik et al., 1993]).

Xysticus britcheri Gertsch, 1934*
MATERIAL EXAMINED: 14 ♂♂ ♀♀.

COMMENTS. This new record extends the northern limit of distribution more than 1.5° [*contra* Cherski, Marusik et al., 1992] in Palaearctic and is slightly more northern than records in Nearctic (Tuktoyaktuk, ca. 69°45'N [Dondale & Redner, 1978]).

Xysticus canadensis Gertsch, 1934

MATERIAL EXAMINED: 1 ♂.

COMMENTS. Known up to Lena River Delta (ca. 72°N, [Marusik et al., 1993]).

Taxonomy

Clubiona kularensis Marusik & Koponen, **sp.n.**

Figs. 1–7.

Material examined: Holotype ♂ (ZMMU), RUSSIA, Yakutia, Yana River down flow, environs of Kular Vill., ca. 70°35'N 134°34'E, 25−30 years old successions in thin larch forest , July 1996 S.N. Nogovitsyna. Paratypes: 1 ♂ 1 ♀ (ZMMU) and 1 ♂ (JWC) from the same locality.

ETYMOLOGY. The specific epithet is a noun in apposition to the type locality, Kular Village.

DESCRIPTION. Measurements (male/female). Body length 3.9–4.2/5.7. Carapace: 1.78–1.83/2.07 long, 1.40–1.43/1.50 wide. Coloration light brown to yellow brown. Carapace without pattern. Abdomen with poorly developed pattern of heart mark and transversal stripes behind it. Chelicerae brown. Legs colored as carapace. Leg spination of male and female: I & II Fe. 3d 1-0l, Ti 2-2v, Mt 1-1v; III Fe 3d 1-1l, Pa 0-1l, Ti 2-2l 2-0v, Mt 1d 4-3l 2-2v; IV Fe 3d 1-1l, Pt 0-1l, Ti 2-2l 2-1v, Mt 5-5l 3-2v.

DIAGNOSIS AND COMMENTS. The new species seems to belong to the *obesa* species group [sensu Dondale & Redner, 1982]. Male palp of *C. kularensis* sp.n. is most similar to *C. furcata* Emerton, 1919 (known from northeastern Siberia and Nearctic) especially tibial apophysis [cf. Dondale & Redner, 1982, figs. 129–131], but can be easily distinguished from it and related species by the shape of embolic base. Female epigyne is rather different from that of other species.

Agyneta brusnewi (Kulczyński, 1908)

Figs. 8–11, 15–16.

COMMENTS. Since original description this species was never redescribed while it was several times recorded from tundra zone of Siberia [from Taimyr to Chukotka, cf. Eskov, 1994]. Because *A. brusnewi* and sympatric *A. ripariensis* are very close to each other we give comparative illustrations for both of them. The single suitable character to separate males of these two species seems to be the shape of lamella characteristica. Males of sibling species have also some differences in size of palpal patella. Females can be easily separated by the shape of septum [cf. fig. 106 in Tanasevitch, 2000 and fig. 30 in Kulczyński, 1908].

Agyneta yakutsaxatilis Marusik & Koponen, **sp.n.**

Figs. 19–23, 31–36, 40–42, 46–47.

Material examined. Holotype ♂ (ZMMU) and paratypes 6 ♂♂ (one on SEM mount in ZMUT) and 1♀ (2♂♂ & 1♀ ZMMU; 2 ♂♂ ZMUT; 2 ♂♂ JWC), RUSSIA, Yakutia, Yana River down flow, environs of Kular Vill., ca. 70°35'N 134°34'E, grass herbaceous anthropogenic communities, July 1996 S.N. Nogovitsyna.

Comparative material: *Agyneta amersaxatilis* Saaristo & Koponen, 1998, 1 ♂ (ZMUT), CANADA, Quebec, Kuujjuarapik, shore dune, 15−27.07.1983 S. Koponen

ETYMOLOGY. The specific epithet refers to the Yakutian origin of this species, which belongs to the *saxatilis* group. By combination of the two words we wish to show its close relationship to *A. amersaxatilis*.

DESCRIPTION. Measurements (male/female). Total length 2.0–2.28/2.36. Carapace 0.86–0.94/0.89 long, 0.69–0.74/0.71 wide. Carapace in both sexes from light to dark brown without pattern, but with marginal dark stripes. Sternum dark brown. Abdomen grey-brownish, because of poor preservation pattern (if present) unvisible. Chelicera in male with 2 promarginal teeth, and 4 fine retromarginal ones. Stridulatory ridges distinct. Tm I in ♂ = 0.24. Leg joints in ♂: I 0.76-0.21-0.71-0.69-0.57; IV 0.81-0.24-0.81-0.73-0.43; ♀: I 0.86-0.24 –missing, IV 0.93-0.24-0.84-0.77-0.47. Tibia I–II with spination 2-0-1-0, III-IV — 2-0-0-0. Palp as in Figs. 19–23, 40–42, 46–47. Lamella characteristica with variable length and density of teeth (cf. Figs. 42 & 47).

DIAGNOSIS. *A. yakutsaxatilis* sp.n. is closely related to the recently described North American species, *A. amersaxatilis*. Yakutian species has slightly smaller size of copulatory organs (cf. Figs. 19–29). Besides size, two species can be separated by the length of the spine of the embolic division (cf. Figs. 22 & 28). Its length in American species is about 0.073, while in *A. yakutsaxatilis* is about 0.057. Additionally, this spine has basal tooth directed backward in the new species and forward in American species.Yakutian species has more stridulatory ridges on male chelicera and shorter promarginal ridge (cf. Figs. 24 & 30 and 34–35 & 37–38). American species has almost reduced second tooth of the down pocket, which is closely spaced with main tooth, while new species has well developed paracymbial teeth which are widely separated. From another similar species *A. yakutsaxatilis* can be distinguished by the shape of tibia.

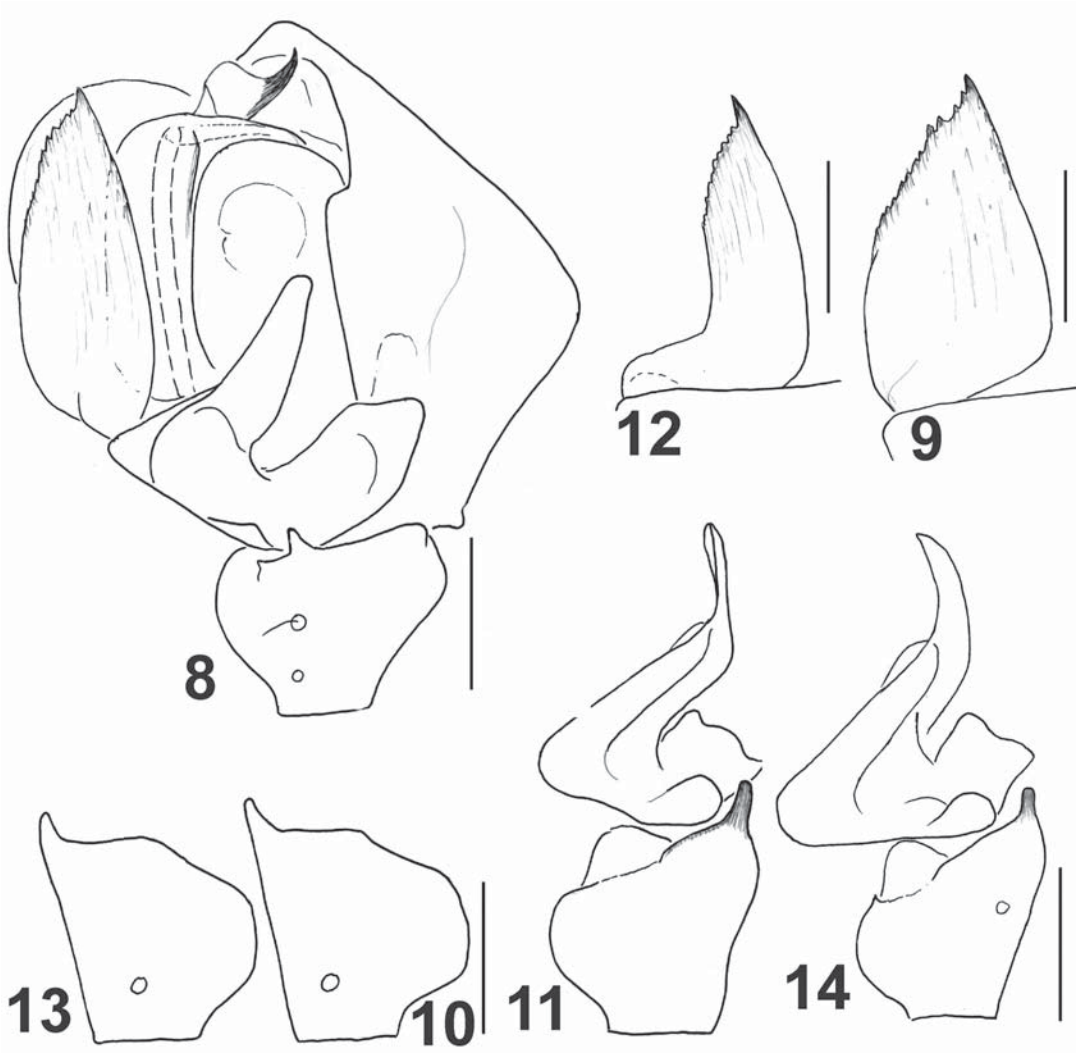
COMMENTS. New species belongs to the well limited *saxatilis* group comprising 6 species: *A. amersaxatilis*, *A. mossica* Schikora, 1993, *A. parasaxatilis* Marusik, Hippa & Koponen, 1996, *A. pseudosaxatilis* Tanasevitch, 1984, *A. saxatilis* (Blackwall, 1844), *A. yakutsaxatilis* sp.n. Within this group there are 3 pairs of morphologically very similar species: *A. saxatilis — A. mossica, A. pseudosaxatilis — A. parasaxatilis*, and *A. amersaxatilis — A. yakutsaxatilis*. All pairs have very distinct palpal tibia, while other characters such as shape of chelicera, cheliceral stridulating field, lamella characteristica have mosaic distribution among species.

HABITATS. All specimens have been collected in anthropogenic meadows, namely: MK 5 — grass-*Equisetum pratense* anthropogenic association on down part of hump-hollow SE exposed slope, ca 20 years; MK 7 — *Arctagrostis* (polargrass) anthropogenic meadow on the place of former mine (10 years succession), slope of fine gravel dump; MK 8 — herb-grass anthropogenic community. 10 years succession on the top of clayed soil-gravely dump. Perhaps it is a species of early succession like some other *Agyneta* species [cf. Koponen & Niemelä, 1994] which are known ballooners.

Poeciloneta yanensis Marusik & Koponen, **sp.n.**

Figs. 50–56, 61.

Material examined: Holotype 1 ♂ (ZMMU), RUSSIA, Yakutia, Yana River down flow, environs of Kular Vill., ca. 70°35'N 134°34'E, thin larch forest near tundra with sparsely cut trees, 12.07.1996 S.N. Nogovitsyna.



Figs. 8–14. Male palps of *Agyneta brusnewi* (Kulczyński) (8–11) and *A. ripariensis* Tanasevitch (12–14): 8 — palp, retrolateral view; 9, 12 — lamella characteristica; 10, 13 — patella, dorsal view; 11, 14 — patella and paracymbium, ventro-prolateral view. Scale = 0.1 mm.

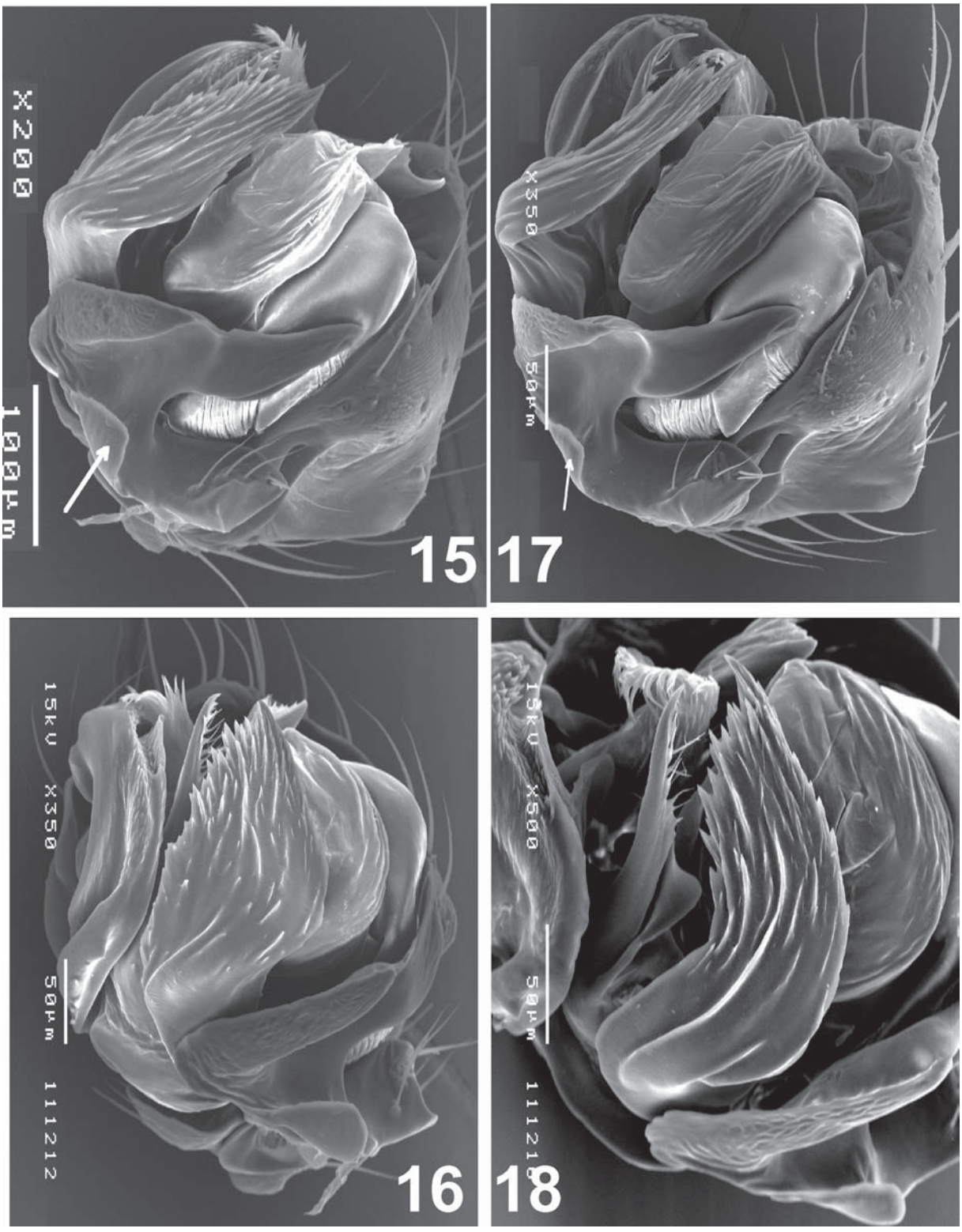
Рис. 8–14. Пальпа самцов *Agyneta brusnewi* (Kulczyński) (8–11) и *A. ripariensis* Tanasevitch (12–14): 8 — пальпа ретролатерально; 9, 12 — lamella characteristica; 10, 13 — голень сверху; 11, 14 — голень и парацимбиум вентро-пролатерально. Масштаб 0,1 мм.

Comparative material:*Poeciloneta variegata*(Blackwall, 1841): 2 ♂♂ (ZMUT), FINLAND, Åland, Enklinge, *Equisetum*, 20.06.–14.8.1971 P.T. Lehtinen & R. Mannila.

ETYMOLOGY. The specific epithet is a noun in apposition to the type locality, Yana River.

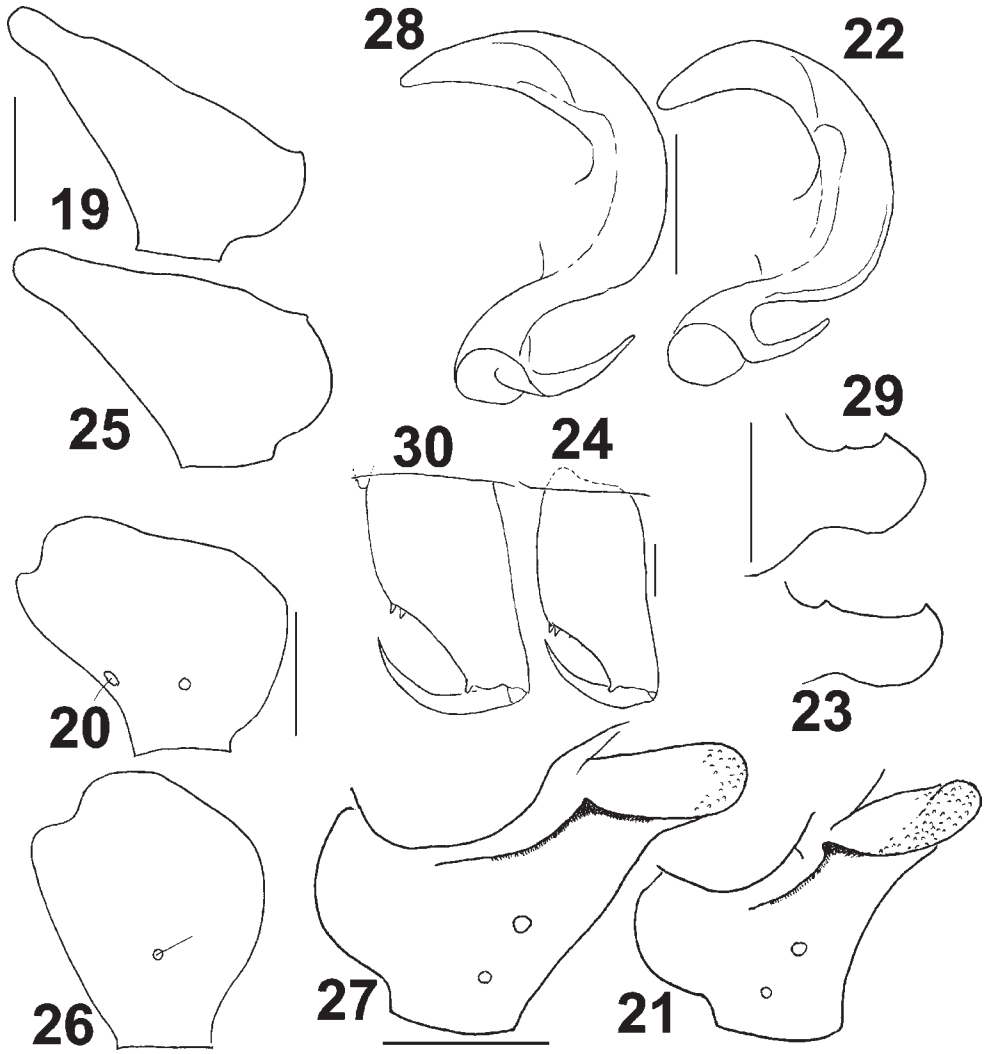
DESCRIPTION. Body length 1.89. Carapace 0.86 long, 0.71 wide, light brown with blackish marginal stripes and dark grey median spot behind cephalic area. Sternum dirty brownish. Abdomen lost coloration due to poor preservation. Legs colored as carapace. Tibia-tarsus of legs I & IV entirely missing, so TmI can not be measured as well as trichobotria on meatarsus IV. Leg joint length: I 1.0-0.21-0-0-0; II 0.86-0.20-0.81-9.71-0.46; III 0.74-0.17-0.57-0.60-0.43; IV 0.94-0.21-0-0-0.

DIAGNOSIS. New species is closely related to the genertype *P. variegata* (Blackwall, 1841) known to be distributed from Europe via whole Siberia to western Nearctic [Marusik et al., 2000]. Differences between two species are shown on Figs. 53–60. *P. yanensis* sp.n. can be separated from sibling species by the less pointed dorsal apophysis of cymbial outgrowth (Figs. 54 & 58) and by lack of hump on prolateral side of cymbium. Paracymbium of the new species has thinner apical pocket (Figs. 53 & 57). *P. yanensis* sp.n. has also smaller palpal tibia (Figs. 55 & 59), smaller and thinner lamella characteristica (Figs. 56 & 60), different shape of transparent lamella between two arms of lamella characteristica as well as small transparent outgrowth of the large arm is lacking. From another Yakutian species, *P. pallida* Kulczyński, 1908, known from Putorana Plateau to Chukotka, the new species can be easily distinguished by much shorter carapace (carapace/femur I ratio = 0.86 and 0.59 in *P. pallida*) and by different shape of the male palp. Cymbial outgrowth of *P. yanensis* sp.n. is divided into two parts while *P. pallida* has only a conical one (cf. figs. 6 & 7 in Tanasevitch, 1989].



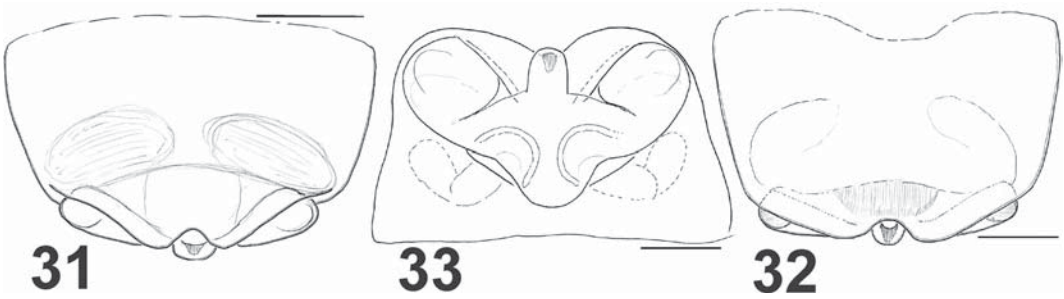
Figs. 15–18. Male palps of *Agyneta brusnewi* (Kulczyński) (15–16) and *A. ripariensis* Tanasevitch (17–18): 15, 17 — palp, ventro-retrolateral view; 16, 18 — lamella characteristica.

Рис. 15–18. Пальпа самцов *Agyneta brusnewi* (Kulczyński) (15–16) и *A. ripariensis* Tanasevitch (17–18): 15, 17 — пальпа вентро-ретролатерально; 16, 18 — lamella characteristica.



Figs. 19–30. Male palps and chelicera of *Agyneta yakutsaxatilis* sp.n. (19–23) (paratype) and *A. amersaxatilis* Saaristo & Koponen (24–28), topotype specimen: 19, 25 — tibia, dorso-prolateral view; 20, 26 — tibia, dorsal view; 21, 27 — palp, retrolateral view; 22, 28 — part of embolic division with spine-line outgrowth; 23, 29 — down part of cymbium (down pocket), ventral view showing teeth; 24, 30 — chelicera, frontal view. Scale = 0.1 mm.

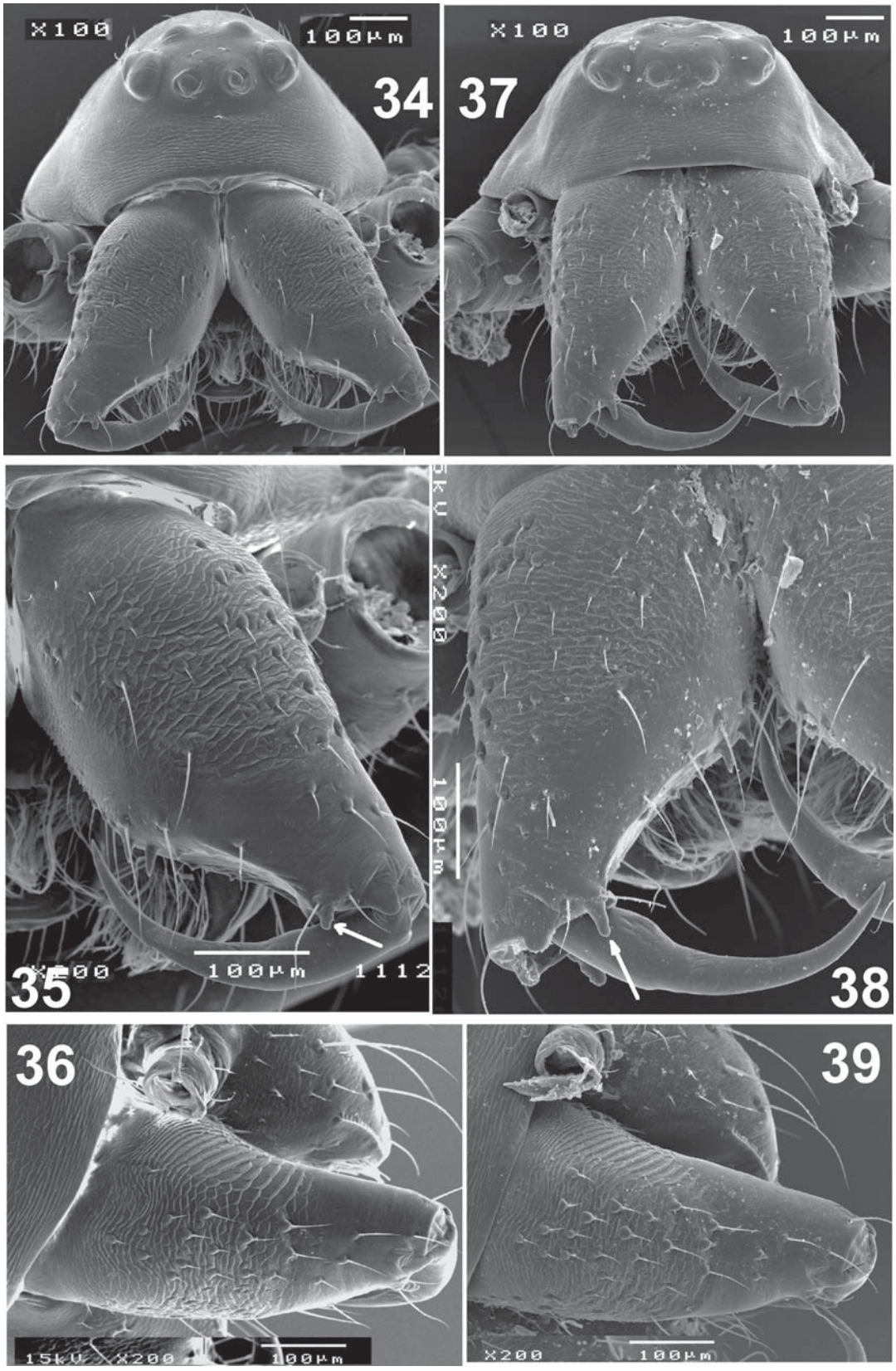
Рис. 19–30. Пальпа и хелицера самцов *Agyneta yakutsaxatilis* sp.n. (19–23) (паратип) и *A. amersaxatilis* Saaristo & Koponen (24–28), топотипичный экземпляр: 19, 25 — голень дорзо-пролатерально; 20, 26 — голень сверху; 21, 27 — пальпа ретролатерально; 22, 28 — часть эмболюсного отдела с шиповидным выростом; 23, 29 — нижняя часть цимбиума (нижний карман), вид снизу показывающий зубчики; 24, 30 — хелицера спереди. Масштаб 0,1 мм.



Figs. 31–33. Epigyne of *Agyneta yakutsaxatilis* sp.n. : 31–32 — ventral view, different aspects, 33 — dorsal view. Scale = 0.1 mm.

Рис. 31–33. Эпигина *Agyneta yakutsaxatilis* sp.n.: 31–32 — вид снизу, разные аспекты, 33 — вид сверху. Масштаб 0,1 мм.

Рис. 34–39. Пальпа самца, карапакс и хелицера *Agyneta yakutsaxatilis* sp.n. (34–36) (паратип) and *A. amersaxatilis* Saaristo & Koponen (37–39), (топотип): 34, 37 — карапакс и хелицера спереди; 35, 38 — хелицера спереди; 36, 39 — хелицера пролатерально, показаны стридуляционные гребни.



Figs. 34–39. Male palps, carapaces and chelicera of *Agyneta yakutsaxatilis* sp.n. (34–36) (paratypes) and *A. amersaxatilis* Saaristo & Koponen (37–39), (topotype): 34, 37 — carapace with chelicera, frontal view; 35, 38 — chelicera, frontal view; 36, 39 — chelicera latero-frontal view showing stridulating ridges.

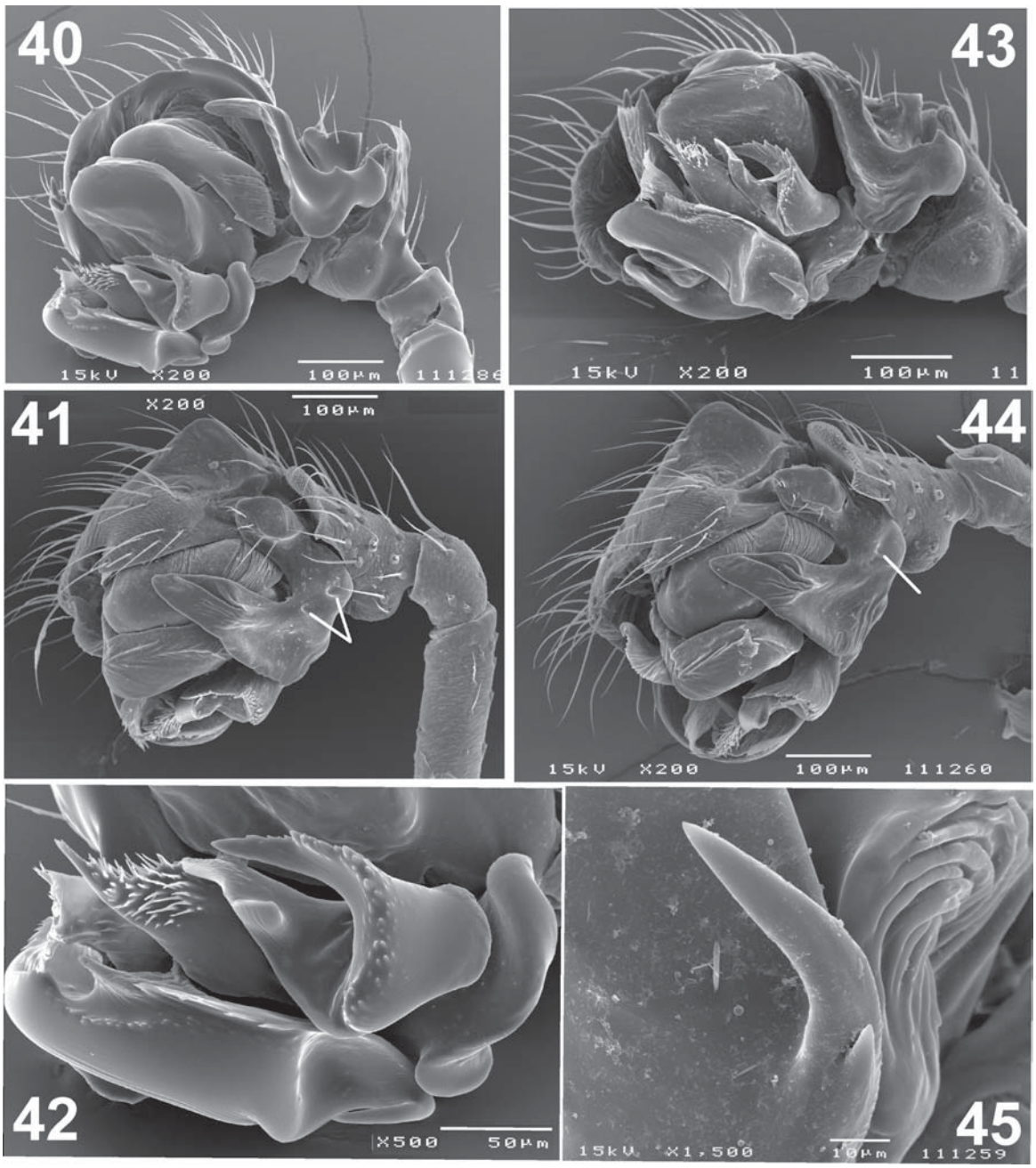


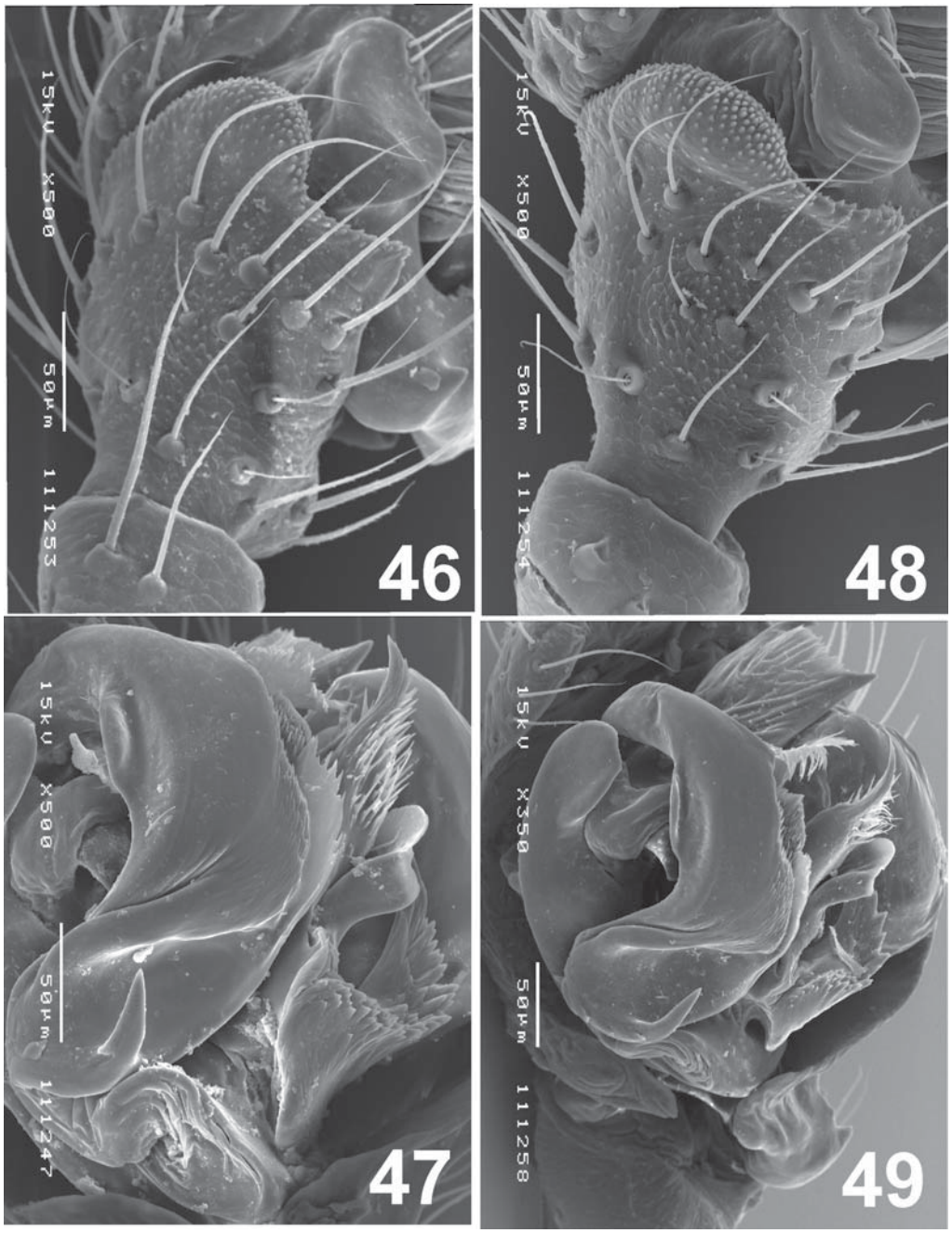
Fig. 40–45 Male palps of *Agyneta yakutsaxatilis* sp.n. (40–42) (paratypes) and *A. amersaxatilis* Saaristo & Koponen (43–45), (topotype): 40, 43 — palp ventral view showing lamella characteristica and paracymbial teeth; 41, 44 — palp, retrolateral view; 42 — embolic division, retrolateral view; 45 — spine of embolic division with tooth.

Рис. 40–45. Пальпа самца *Agyneta yakutsaxatilis* sp.n. (40–42) (паратип) and *A. amersaxatilis* Saaristo & Koponen (43–45), (топотип): 40, 43 — пальпа, вид снизу показывающий lamella characteristica и зубцы парацимбиума; 41, 44 — пальпа ретролатерально ; 42 — эмболюсный отдел ретролатерально; 45 — шипик эмболюсного отдела с зубчиком.

COMMENTS. It is possible that other Siberian populations of *P. variegata* belong to this species.

Praestigia groenlandica Holm, 1967
Figs. 67–70.

COMMENTS. Because this species was illustrated only once [Holm, 1967], we provide some SEM figures of the male palp and peculiar cephalic hairs. Palpal tibia of this and related undescribed species from the upper Kolyma have numerous slit organs on the retrolateral-dorsal side. This character seems to be unknown in linyphiids. Recently [Koponen et al., 2002] we found slightly different slit organs on cymbium of Eurasian species *Kikimora palustris* Eskov, 1988. Judging from these findings, it is safe to suggest that slit organs just have been overlooked.



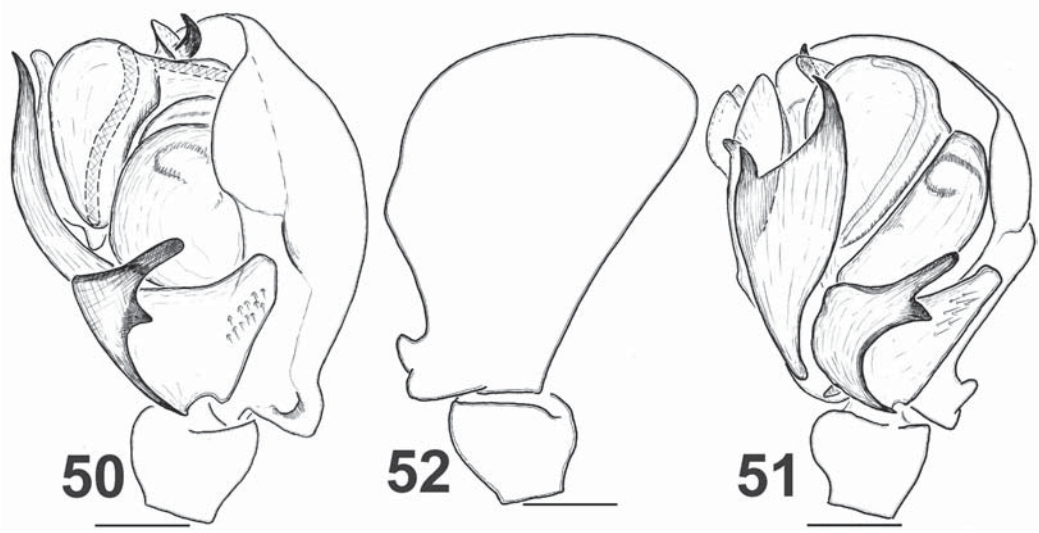
Figs. 46–49. Male palps of *Agyneta yakutsaxatilis* sp.n. (46–47) (paratypes) and *A. amersaxatilis* Saaristo & Koponen (48–49) (topotype): 46, 48 — embolic division showing spine, lamella characteristica, ventral view; 47, 49 — tibia, dorso-prolateral view.

Рис. 46–49. Пальпа самца *Agyneta yakutsaxatilis* sp.n. (46–47) (паратип) и *A. amersaxatilis* Saaristo & Koponen (48–49), (топотип): 46, 48 — эмболюсный отдел, показаны шип и lamella characteristica, вид снизу; 47, 49 — голень дорзо-пролатерально.

Discussion

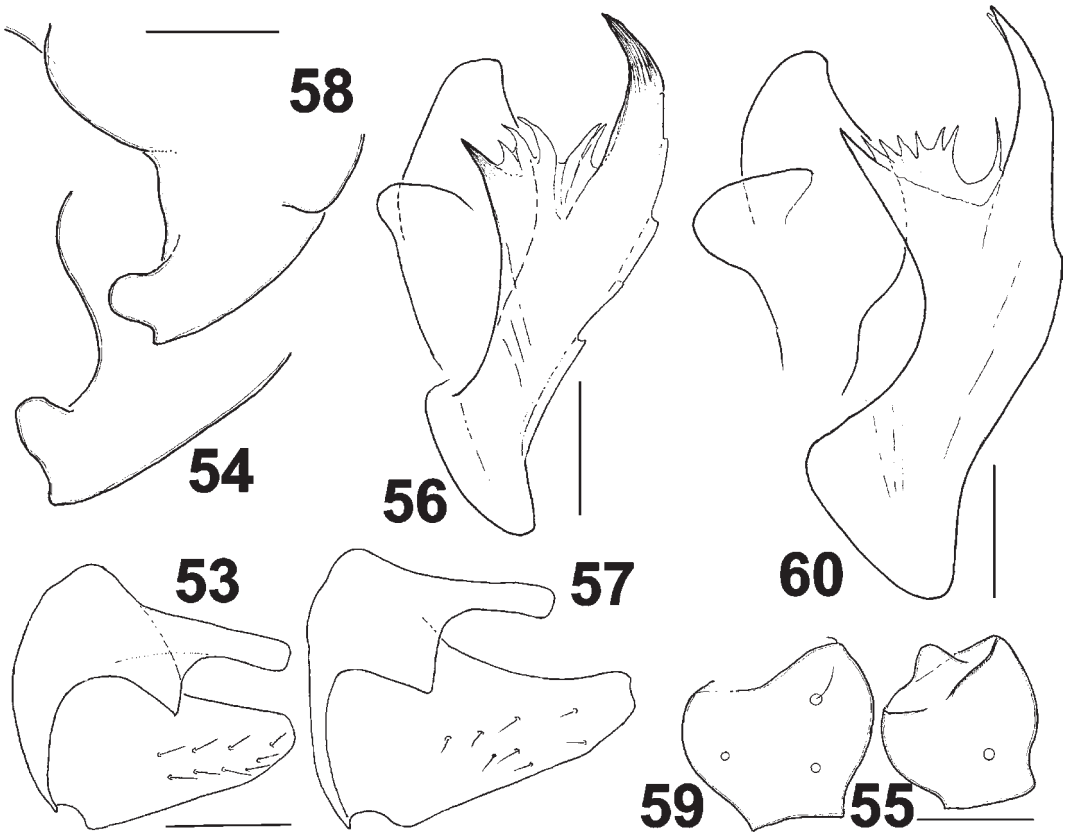
Fauna of the Kular area

Spider fauna of the area studied seems to be most diverse in the Arctic zone (north of 70°N). Number of species found in Kular (62 species) is higher than in Wrangel Island (44 species) situated at the same latitudes, but being an island, fauna of which was surveyed for about 10 years by different methods. By applying additional sampling methods in environs of Kular, such as litter sifting, hand picking under stones on pebbly beaches and screes, square sampling, number of species would singificantly increase. Judging from the number of lycosids found in study area and accounting stable value of lycosids in northern areas [cf. Marusik &



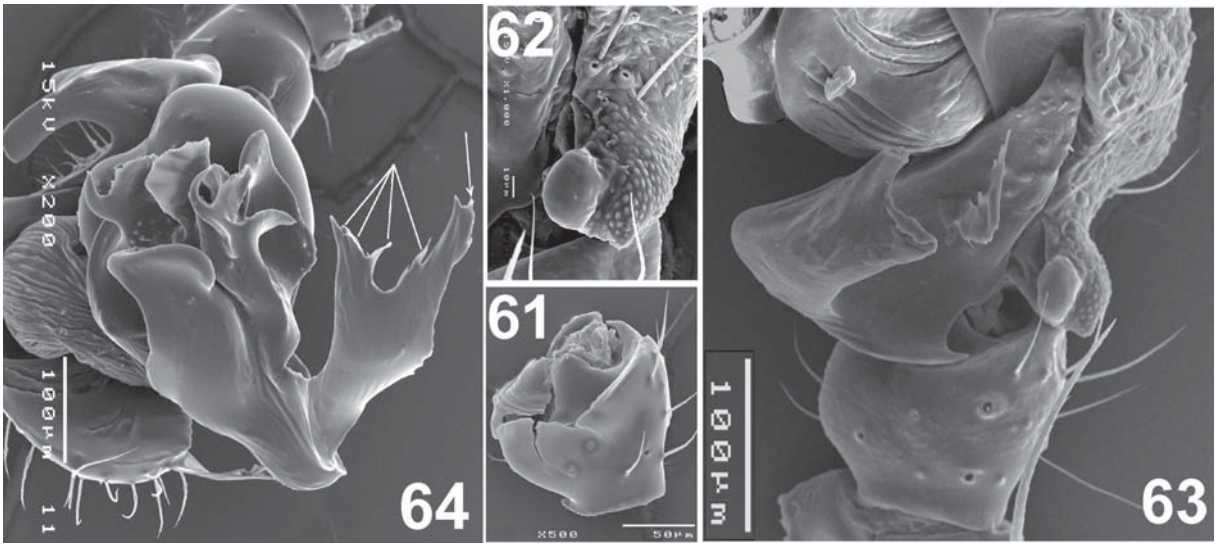
Figs. 50–52. Male palp of *Poeciloneta yanensis* sp.n.: 50 — retrolateral view; 51 — ventro-prolateral view, 52 — cymbium and patella, dorso-lateral view. Scale = 0.1 mm.

Рис. 50–52. Пальпа самца *Poeciloneta yanensis* sp.n.: 50 — ретролатерально; 51 — вентро-пролатерально, 52 — цибиум и голень дорзо-вентрально. Масштаб 0,1 мм.



Figs. 53–60. Male palps of *Poeciloneta yanensis* sp.n. (53–56) and *P. variegata* (Blackwall) (57–60), specimens from Finland: 53, 57 — paracymbium, retrolateral view; 54, 58 — cymbial outgrowth, apical-lateral view; 55, 59 — tibia, retrolateral view; 56, 60 — lamella characteristica. Scale = 0.1 mm.

Рис. 53–60. Пальпа самца *Poeciloneta yanensis* sp.n. (53–56) и *P. variegata* (Blackwall) (57–60), экземпляр из Финляндии: 53, 57 — парацимбиум ретролатерально; 54, 58 — вырост цимбиума, вид сверху-сбоку; 55, 59 — голень ретролатерально; 56, 60 — lamella characteristica. Масштаб 0,1 мм.



Figs. 61–64. Male palps of *Poeciloneta yanensis* sp.n. (61) and *P. variegata* (Blackwall) (62–64), specimens from Finland: 61 — tibia, lateral view; v. part of palp showing 2 trichobotria near basal part of tibia and cymbial outgrowth (apical pocket of paracymbium broken); 62 — cymbial outgrowth; 63 — palpal tibia, paracymbium and cymbial outgrowth; 64 — embolic division showing lamella characteristica with transparent outgrowths (pointed).

Рис. 61–64. Пальпа самца *Poeciloneta yanensis* sp.n. (61) и *P. variegata* (Blackwall) (62–64), экземпляр из Финляндии: 61 — голень сбоку, нижняя часть пальпы с 2 трихоботриями возле нижней части голени и вырост цимбиума (верхний карман цимбиума отломан); 62 — вырост цимбиума; 63 — голень пальпы, парацимбиум и вырост цимбиума; 64 — эмболюсный отдел, показаны lamella characteristica вместе с прозрачными отростками (показаны стрелками).

Koponen, 2002b] it is possible to predict that species diversity around Kular is not less than 100 species. Higher species diversity can be expected on the base of linyphiid diversity. Faunas lying in north part of the Boreal zone and higher has linyphiid percentage not lower than 55% [cf. Marusik & Koponen, 2002b]. Accounting this fact fauna of Kular can number at least 7 species more.

The species numbers in forestline areas of Fennoscandia at 69–69°45'N are remarkably higher, around 160 species in Kilpisjärvi and Kevo [Palmgren, 1972; Koponen, 1977]; this is probably caused by milder climate due to the Gulf Stream.

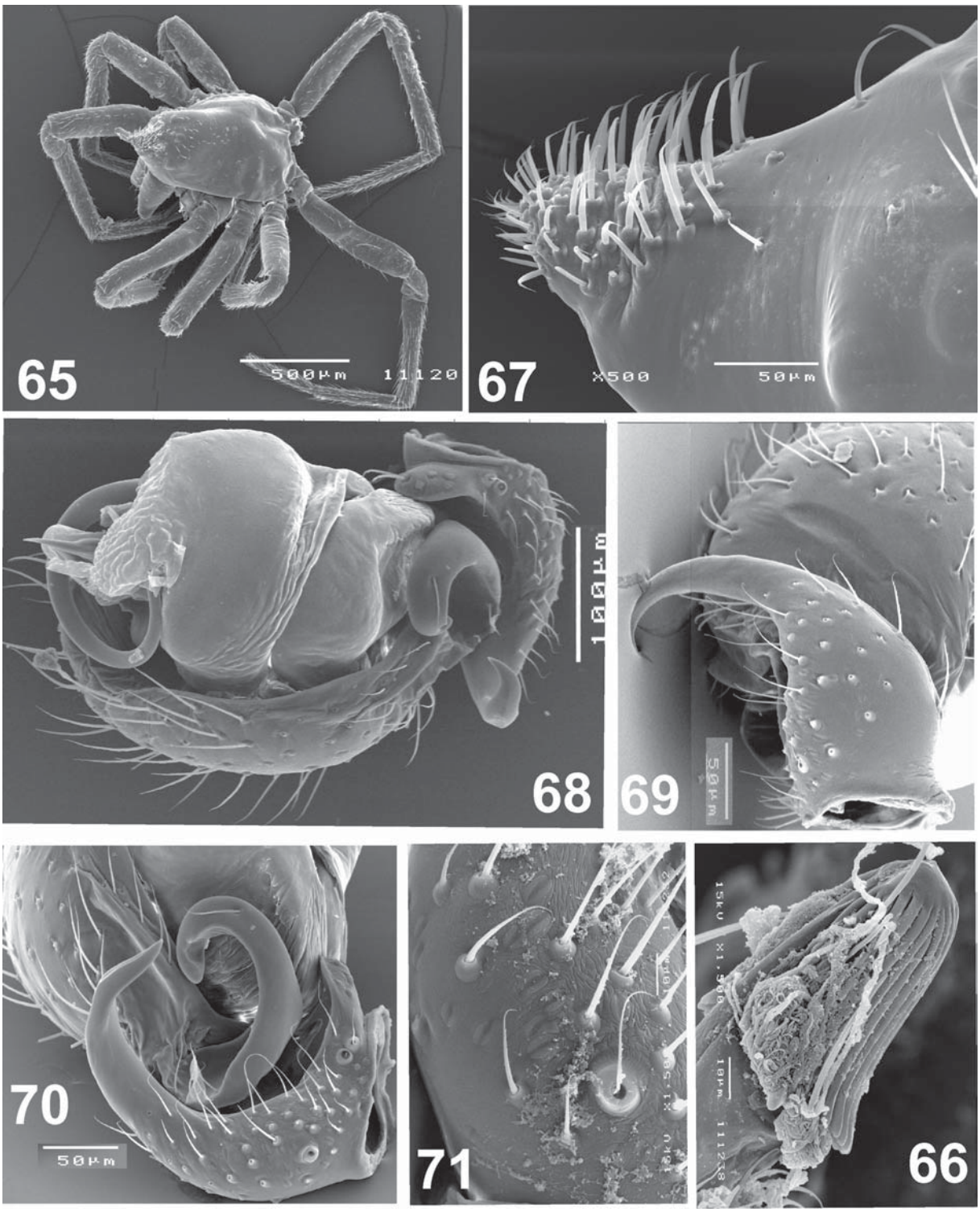
Judging from the ranges of boreo-arctic species in eastern Asia [e.g. Marusik et al., 2000], following species may occur in the present study area:DICTYNIDAE: *Dictyna major* Menge, 1869, *Dictyna tyshchenkoi* Marusik, 1988; *Emblyna borealis* (O.Pickard-Cambridge, 1877); GNAPHOSIDAE: *Gnaphosa orites* Chamberlin, 1922; LINYPHIIDAE: *Arcterigone pilifrons*(L.Koch, 1879),*Collinsia spetsbergensis*(Thorell, 1871), *Bathyphantes eumenis* (L.Koch, 1879), *Diplocephalus barbatus*(L.Koch, 1879),*Hilaira vexatrix*(O. Pickard-Cambridge, 1877), *Mughiphantes sobrius* (Thorell, 1871),*Semljicola simplex*(Kulczyński, 1908), *Walckenaeria karpinskii*(O.Pickard-Cambridge, 1873); LYCOSIDAE: *Acantholycosa sibirica* (Kulczyński, 1908), *Alopecosa hirtipes* (Kulczyński, 1908), *Alopecosa mutabilis*(Kulczyński, 1908), *Alopecosa albostriata* (Grube, 1861), THERIDIIDAE: *Thymoites oleatus* (L. Koch, 1879).

All species originally described from the territory of Yakutia by Kulczyński and other authors have been found outside of the region. So, until recently Yakutia, unlike neighboring Middle Siberia and north-eastern Siberia (Magadan Area), had no own endemics. Three species described in this paper seem to fill the "vacant" niche, at least temporarily.

Spider succession

The early stages of succession can be characterized by the dominance of mainly tundra species such as *Erigone remota, E. tirolensis, Hilaira incondita, H. leviceps, Hybauchenidium aquilonare, Praestigia groenlandica, Pardosa podhorskii, Xysticus albidus*. There are a few exceptions such as *Erigone arctica sibirica* (widespread in NE Siberia), *Pelecopsis parallela* (arcto-boreo-nemoral distribution), *Tmeticus tolli* (boreal species), *Pardosa sodalis* (boreal species) and *Pachygnatha clercki* (polyzonal species). It is interesting that the tundra lycosid *Pardosa podhorskii* occurs only in disturbed places and reaches high density in 10 and 30 years old successions. In contrast, thin larch forest communities have no tundra species among dominants and almost no tundra species at all.

It seems that several species can be used as good indicators for a certain type of habitats in the Kular area. *Clubiona kularensis* sp.n., *Gnaphosa microps, Arctella lapponica, Xycticus britcheri* according to data of 1996 and 2000 occur only in thin larch forest communities. Three other species belonging to the wandering guild,



Figs. 65–71. *Praestigia* sp. (65–66, 71, from the upper Kolyma) and *P. groenlandica* Holm (67–70, from Kular) and 65 — prosoma showing cephalic "cap"; 66 — cephalic "cap"; 67 — cephalic part with lost "cup", showing secreting groove; 68–70 — different turns of palp; 71 — tibial slit organs.

Рис. 65–71. *Praestigia* sp. (65–66, 71, из верховий Колымы) и *P. groenlandica* Holm (67–70, из Кулара): 65 — головогрудь, показана "шляпка"; 66 — "шляпка"; 67 — головной отдел без "шляпки", показана секреторная щель; 68–70 — пальпа, разные аспекты; 71- щелевидные органы на голени.

Table 1. Material and spatial distribution of spiders. (* and p — indicates that species was not properly counted).
Таблица 1. Материал и пространственное распространение пауков (* и p — экземпляры, обычно многочисленные, не подсчитаны).

	1996														2000												
	6	1	3	5	7	8	11	IV/15	4	9	10	I/52	II	sum	1	3	6a	6b	7	11	17	IV/15	9	10	10b	II	sum
Aculepeira packardi																								1			1j
Araniella sp.																1											1(m)
Larinioides cornutus					1									1													
Clubiona kularensis									2	1	1			4													
Clubiona latericia													1														
Arctella lapponica									15	17	8	14		54										1			1j
Drassodes mirus											2			2													
Gnaphosa microps				1						1	2			4									1	2	2		5m
Gnaphosa nigerrima					1	1								2													
Gnaphosa sticta				1					1	1	1			4													
Haplodrassus hiemalis									1	2	5	2	1	11										1	4		5m
Agyneta alaskensis						1								1													
Agyneta brusnewi												1		1													
Agyneta ripariensis										1				1											1		1m
Agyneta yakutsaxatilis				1	4	2								7													
Bathyphantes humilis					3			1				1		5													
Collinsia holmgreni		2	1			4		2						9							1						1f
*Erigone arctica sibirica**		104	70		61	p	319	1						555			6		1		10	2					20mf
Erigone psychrophila			1											1													
*Erigone remota**		143	p	11	p	p	38							192		3					1						4mf
Erigone tirolensis		159	34		3	7	100				1			304			2				1						3m
Hilaira asiatica						1								1													
Hilaira glacialis?					1									1													
Hilaira hemiosa									1		2			3													
Hilaira incondita		256	8		20	8	57	1						350	1	1	2		3	1	1						9mf
Hilaira leviceps		10		1	1		1		2					15	1				1								2m
Hilaira syrojeczkowskii					3									3													
Hybauchenidium aquilonare				12					1				1	14												1	1f
Hybauchenidium ferrumequinum										1		1		2										1			1
Hypomma affine					1									1													
Islandiana falsifica						1								1			1										1m

Table 1 (continuaion).
Таблица 1 (продолжение)

	1996														2000												
	6	1	3	5	7	8	11	IV/15	4	9	10	I/52	II	sum	1	3	6a	6b	7	11	17	IV/15	9	10	10b	II	sum
Lasiargus pilipes												2		2													
Mecynargus paetulus		4			125	1	5	2						137	3		1										4mf
Mecynargus tungusicus														1													
Oedothorax retusus						1								1													
Pelecopsis parallela					25									25					1			4				3	8mf
Perregrinus deformis		1												1													
Poeciloneta yanensis												1		1													
Praestigia groenlandica		8	27		154	2	10	54					1	256	1				12			3					16f
Semljicola alticola					1								1	2													
Silometopoides pampia?																						3					3f
Tmeticus tolli					6									6	1				2								3m
Walckenaeria fraudatrix										1				1													
Walckenaeria korobeinikovi				1					1		1			3													
Alopecosa borea				6		1			48	7	18	2	8	90											1		1f
Pardosa algens				1				2					6	9								2	1		14	3	20mf
Pardosa atrata						1								1													
Pardosa eiseni				1					12	6	73	3		95										2			2f
Pardosa lapponica				4	1	1			28	70	142	17		263									2	9	5		16mf
Pardosa podhorskii		22	77	1	580	173	122	545						1520	5				12	12	14	54				1	98mf
Pardosa aff. *prosaica*								1						1			3	1									4mf
Pardosa septentrionalis						1							121	122											3	1	4f
Pardosa sodalis				180		2			135	28	48	10		403									5	3	1		9f
Pardosa tesquorum						13								13			10	10			1	5					26mf
Tricca alpigena				4			1		16	6	4	6		37										1	3		4mf
Thanatus arcticus				2	1				10		4	2		19											1	2	3mfj
Pachygnatha clercki		1		2	62	3	2	60					2	132	22	18			13	16	14	71					154mf
Theridion sp.														0		1											1(m)
Ozyptila arctica									11	7	14	13	3	48											1		1f
Xysticus albidus						8								8				1									1m
Xysticus britcheri									2	3	2			6									3	2	2	1	8mf
Xysticus canadensis													1	1													
TOTAL		710	218	229	1060	232	655	669	286	151	328	74	147		31	23	25	12	45	29	43	144	12	23	38	12	437

Haplodrassus hiemalis, Pardosa eiseni, Pardosa lapponica have high density only in thin larch stands. Rather many more or less common species can be served as indicators of habitats with formerly destroyed ground: *Agyneta yakutsaxatilis* sp.n., *Hilaira syrojeczkovskii, Pelecopsis parallela, Tmeticus tolli, Pardosa* aff *prosaica, Xysticus albidus*. Several rare spiders have been found in disturbed habitats also. Only one species can be used as a good indicator of mountain tundra communities — *Pardosa septentrionalis*. However, no special mountain tundra fauna was found here, contrary to the upper Kolyma River flow with several dozens of exclusive tundra dwellers [Marusik, 1988]. In general, in forest and in tundra living lycosid species were not found in the same traps; only a few occasional specimens can be found together.

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