

On some poorly known Siberian wolf spiders. 1. *Pardosa groenlandica* (Thorell, 1872), and *P. glacialis* (Thorell, 1872) (Aranei Lycosidae)

О некоторых малоизвестных пауках-волках Сибири. 1. *Pardosa groenlandica* (Thorell, 1872) и *P. glacialis* (Thorell, 1872) (Aranei Lycosidae).

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КЛЮЧЕВЫЕ СЛОВА: Lycosidae, *Pardosa*, северо-восток Азии, таксономия.

ABSTRACT: Illustrated redescrptions of the two poorly known Siberio-Nearctic spider species, as well as notes on their distributions, are given: *Pardosa groenlandica* (Thorell, 1872), and *P. glacialis* (Thorell, 1872).

РЕЗЮМЕ: Приведены иллюстрированные переописания двух малоизвестных сибирско-неарктических видов пауков и сведения об их распространении: *Pardosa groenlandica* (Thorell, 1872) и *P. glacialis* (Thorell, 1872).

The wolf spider fauna of North-East Asia is relatively well-documented due to several publications [Kulczyński, 1907; Holm, 1970; Lobanova & Nikolaev, 1981; Zyuzin, 1979a, b; Eskov, 1985; Kronstedt, 1986; Zyuzin & Marusik, 1988, 1989; Marusik et al. 1992]. Altogether, 35 species have hitherto been reported from that region, of them *Acantholycosa subsolana* (Kulczyński, 1907), *A. aborigenica* Zyuzin & Marusik, 1988, *Alopecosa hirtipes* (Kulczyński, 1907), *Pardosa podhorskii* (Kulczyński, 1907), and *P. tyshchenkoi* Zyuzin & Marusik, 1989, have been originally described from North-East Siberia. Distributions of the wolf spiders within that region have been summarized in Marusik et al. [1992].

The spider genus *Pardosa*, to which the present paper is devoted, is represented there by 18 species. Three of them, *Pardosa groenlandica* (Thorell, 1872), *P. glacialis* (Thorell, 1872), and *P. nordicolens* Chamberlin et Ivie, 1947, previously known only in North America, have been recorded recently in North-East Asia as well [Kronstedt, 1986, Marusik et al., 1992]. Yet these records have been accompanied by neither sufficient illustrations nor diagnoses. The main goal of the present paper

is thus to depict two former species as based on NE-Asian material.

The following abbreviations have been accepted in the text: A — anterior, P — posterior, M — median, L — lateral, E — eyes. Terminology of palpal sclerites is given after Zyuzin [1979a]. All measurements are given in mm.

Material serving the basis for this contribution is housed in the Institute for Biological Problems of the North, Magadan.

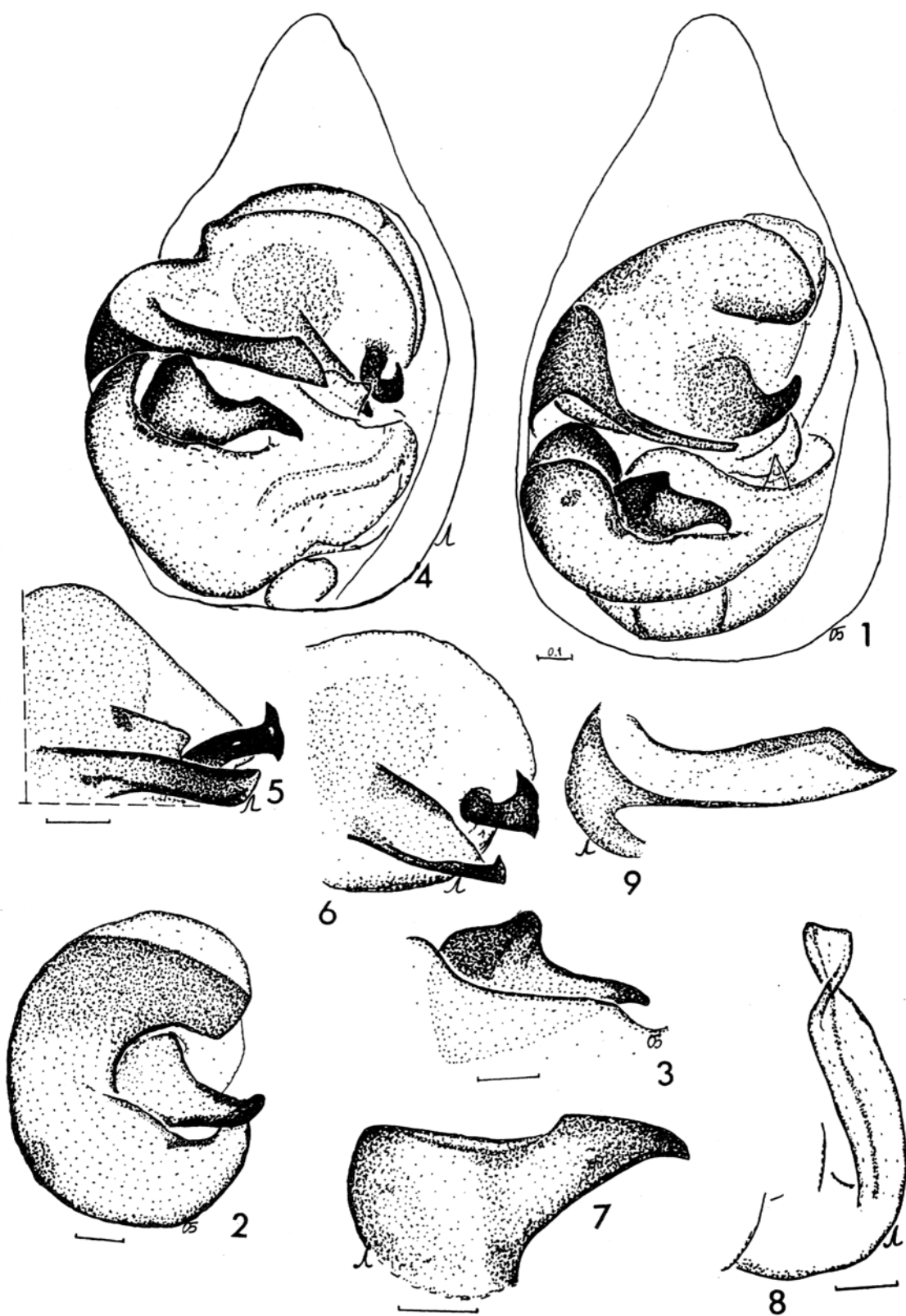
Before going further we wish to express our deep gratitude to our supervisor, Dr. Yuri M. Marusik (Y.M.), who has initiated this work and goes on providing us the necessary aid for our research. The paper has been supported in part by Grant No. NOGOOO from the International Science Foundation.

*Pardosa groenlandica* (Thorell, 1872)

Figs 1-3, 10.

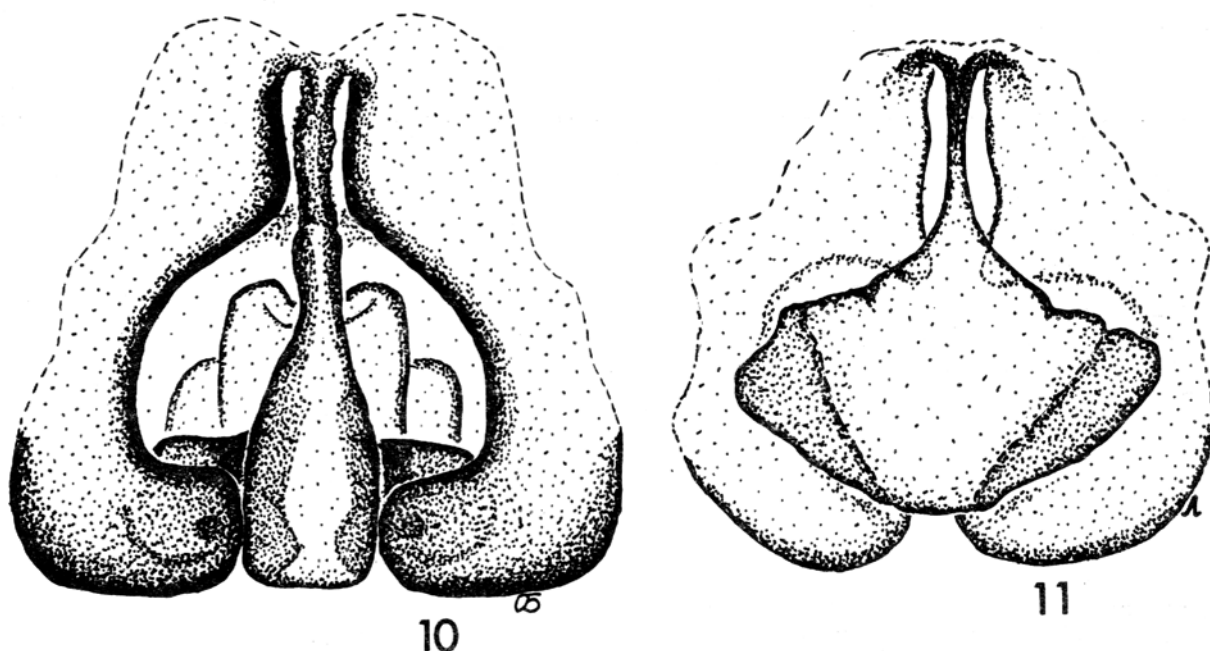
MATERIAL EXAMINED. RUSSIA: 2 ♂♂, Magadan Area, Upper Kolyma, environs of Vetrennyi, gravelly bank of Kolyma River, 13.06.1993; 2 ♀♀, Magadan Area, Upper Kolyma, Kontaktovyi Stream (Kulu River tributary), 900 m, pebbly banks, 11.08.1986 (all leg. Y.M.); 1 ♀, 110 km W of Magadan, environs of Balagannoye, 07.1986 (leg. L. Zelenskaya). - East Chukot Peninsula: 1 ♂, 15 ♀♀, upper flow of Bolshaya Osinovaya River (Belaya River tributary), pebbly banks, 11-15.07.1989; 2 ♀♀, upper flow of Vulvyveyem River, 67°10'N, 178°0'E, Gytlenumkum, pebbly banks 8.08.1988 (all leg. Y.M.).

DESCRIPTION. Female. Carapace: 4.9 long, length/width ratio 1.2, brown, median band yellow, broadening level to median groove, extending only to rhomboidal spot. Submarginal stripes yellow, discontinuous, with irregular margins. Rhomboidal spot represented by 2 stripes on sides of median groove. Eye area dark brown, eye rings black. Lateral sides of cephalic part with yellow spots. Sternum brown, monochromous. Legs brown, with



Figs 1-9. Male palps of *Pardosa groenlandica* (1-3) and *P. glacialis* (4-9): 1, 4 — palp, ventral; 2, 5, 6 — apical division, ventral; 3, 7 — tegular apophysis, ventral; 8, 9 — embolus, dorsal and ventral, resp.

Рис. 1-9. Пальпы самцов *Pardosa groenlandica* (1-3) и *P. glacialis* (4-9): 1, 4 — пальпа, снизу; 2, 5, 6 — апикальная отдел, снизу; 3, 7 — тегулярный отросток, снизу; 8, 9 — эмболюс, соответственно сверху и снизу.



Figs 10-11. Epigynes of *Pardosa groenlandica* (Fig. 10) and *P. glacialis* (Fig. 11), ventral.  
Рис. 10-11. Эпигины *Pardosa groenlandica* (10) и *P. glacialis* (11), снизу.

yellow spots and rings. Femora dark brown ventrally, with dorsal and lateral yellow stripes and spots. Tibia and metatarsus with 2 yellow rings. Tarsi yellow-brown. Tibia II with 3-3 ventral spines besides apicals. Metatarsus with 2-2 ventral spines besides apicals. Abdomen grey-brown dorsally, with greenish hue (lighter than in ♂), lancet with indistinct margins and without any spots below. Epigyne as in Fig. 10, with a long bottle-shaped septum, fovea big with a large, median, whitish body.

Male. Carapace: 4.5 long, length/width ratio 1.3, coloration as in ♀; pale yellow median band somewhat broadening level to median groove. Eye area brown-black, sternum and legs also like in ♀. Palp with brown-black cymbium, other segments as carapace. Spination of leg II as in ♀. Abdomen as in ♀ but somewhat darker. Palp as in Figs 1-3, with a broadened tegular apophysis (Figs 1, 3), finger-like terminal apophysis curved apically (Figs 1, 2), embolus with a wide base attenuating at tip.

Eye sizes and interdistances (male/female): AME 0.13/0.20, ALE 0.15/0.14, PME 0.34/0.35, PLE 0.28/0.28, ALE-ALE 0.42/0.42, AME-ALE 0.10/0.17, PME-PME 0.04/0.04.

Length of leg segments (male/female):

	Femur	Patella	Tibia	Metatarsus	Tarsus
I	3.25/3.90	1.25/1.65	2.85/4.30	2.95/3.25	1.75/2.00
II	3.20/3.90	1.25/1.70	2.85/4.70	3.00/3.35	2.00/2.00
III	3.05/3.95	1.25/1.35	2.65/4.70	3.35/3.85	1.75/2.00
IV	3.90/5.10	1.40/1.70	3.60/4.80	5.20/6.00	2.20/2.70

DIAGNOSIS. *Pardosa groenlandica* belongs to the *modica* species group [Dondale & Redner, 1990]. The ♂ of this species can be easily distinguished from all other Siberian congeners by the shape of the terminal and tegular apophyses. The ♀ epigyne of *P. groenlandica* is most similar to that of *P. lapponica* (Thorell, 1872), from

which can be easily separated by the larger body size (*P. groenlandica* 8-10 mm, *P. lapponica* 5-7 mm) and longer septum as well as by the shape of the stem base. Besides, the epigyne in *P. groenlandica* has sclerotized plates in the epigynal fovea (Fig. 10) which are absent in *P. lapponica*.

NOTE: Comparison of Asian and Canadian ♀♀ of this species has revealed some minor differences in the shape of the epigyne and in the fovea width/length ratio. Evaluation of the above differences can be made only after Asian ♂♂ and ♀♀ are compared with those from Labrador or Greenland only.

DISTRIBUTION. This species was first recorded in Siberia by Buchar [1971] as *P. disjuncta* Jackson, 1933. Later that misidentification was corrected, and two northeast Yakutian records were added [Kronstedt, 1986].

The species ranges from E-Greenland (71°N) and Newfoundland, southward to Maine along the coast and the Great Lakes (45°N), throughout Canada up to N-Alaska (70°N) [Dondale & Redner, 1990], in Asia from the upper flow of Amguema River (68°N) and mouth of Kolyma River (69°30'N) [Kronstedt, 1986] southward to the southern coast of the Sea of Okhotsk (59°N) and Avachinsky Volcano in Kamchatka (as *P. disjuncta*, Buchar [1971], see Kronstedt, [1986]), westward to central (65°N, 133°E) and northern (71°N, 128°E) Yakutia [Marusik et al., 1992, 1993].

*Pardosa glacialis* (Thorell, 1872)

Figs 4-9, 11.

MATERIAL EXAMINED: RUSSIA: 3 ♀♀, NE-Chukot Peninsula, middle flow of Chegitun River, 66°20'N, 21.07-10.08.1991 (leg. S.P. Bukhkalov); 2 ♂♂, NE-Chukot Peninsula, Koolenveyem Lake (67°N), Koolen River, Uelen Lagoon basin, 07.1987 (leg. M.B. Skopets).

**DESCRIPTION:** Male. Carapace 2.9 long, length/width ratio 1.2, brown. Yellow median band with distinct margins around median groove. Yellow submarginal stripes with irregular margins. Marginal brown stripe twice as thin as submarginal one. Lateral dark band thrice as wide as submarginal one. Eye area black. Sternum brown. Legs uniform yellow-brown. Abdomen dorsally brown, margined with a dark band and with two longitudinal rows of dark spots below. Palp as in Figs 4-9, with a broadened tegular apophysis (Figs 4, 7) and a hook-like terminal apophysis (Figs 4-6). Epiconductor apophysis as in Figs 5-6. Embolus (Figs 4, 8-9) wide, with an enlarged, spiralling tip (Fig. 8).

Female. Carapace as in ♂. Eye area black, sternum uniform brown. Legs brownish with yellow spots on femora. Tibia I-II with 3-2 lateral spines, besides apical. Rings on femora absent. Abdomen greyish-brown. Epigyne as in Fig. 11, septum with a narrow stem and a wide plate covering entire fovea. Shape of septal plate variable (s. figs 256-261 in Dondale & Redner [1990] and figs 92a-e in Holm [1967]).

Eye sizes and interdistances (male/female): AME 0.10/0.10, ALE 0.09/0.10, PME 0.28/0.28, PLE 0.28/0.28, AME-AME 0.10/0.12, AME-ALE 0.03/0.03, PME-PME 0.31/0.35.

Length of leg segments (male/female):

	Femur	Patella	Tibia	Metatarsus	Tarsus
I	2.15/2.25	1.00/0.70	1.70/2.10	1.80/1.50	1.55/1.30
II	2.10/2.25	0.90/1.05	1.60/1.75	1.50/1.35	1.20/1.30
III	2.10/2.10	0.80/0.90	1.45/1.70	2.00/1.75	1.10/1.30
IV	2.80/3.00	0.80/0.80	2.35/2.45	3.35/3.30	1.75/1.75

**DIAGNOSIS.** *P. glacialis* also belongs to the *modica* species group. Unlike other Siberian species, ♂ *P. glacialis* has a hammer-like unciform terminal apophysis. The broad and apically twisted embolus is also characteristic of this species as well as the shape of the tegular apophysis. The ♀ differs from other Siberian congeners by the shape of the epigynal septum.

**DISTRIBUTION:** The tundra zone of North America from E-Greenland (74°N), southward to S-Greenland (61°N) and N-Labrador (59°N), north to Ellesmere Island (82°N), through North-West and Yukon

Territories to N-Alaska [Dondale & Redner 1990], in Asia found at the eastern edge of Chukot Peninsula (172°W, 66°N).

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