Arthropoda Selecta 16 (3): 169–172

Remarks on the Ural spider (Arachnida, Aranei) fauna, 13. New records of linyphiid spider (Linyphiidae)

Заметки по фауне пауков (Arachnida, Aranei) Урала, 13. Смешанные заметки по линифиидам (Linyphiidae)

S.L. Esyunin
С.Л. Есюнин

Department of Zoology, Perm State University, Bukireva Street 15, Perm 614600 Russia.
Кафедра зоологии беспозвоночных животных, Пермский государственный университет, ул. Букирева 15, Пермь 614600 Россия.

KEY WORDS: spiders, Linyphiidae, fauna, Urals.
КЛЮЧЕВЫЕ СЛОВА: пауки, Linyphiidae, фауна, Урал.

ABSTRACT. The results of the redetermination of the Urals specimens of *Maro* genus and new records of 11 spider species are given. The *Maro* genus includes four species in Urals fauna: *M. minutus* O. Pickard-Cambridge, 1906, *M. pansibiricus* Tanasevitch, 2006, *M. sibiricus* Eskov, 1980 and *M. sublestus* Falconer, 1915. Two species *Porrhomma microcavense* (Blackwall, 1856) and *Troxochrota scabra* Kulczyński in Chyzer et Kulczyński, 1894 are recorded in Russia and the three ones in the Urals for the fist time.

РЕЗЮМЕ. Приведены результаты переопределения пауков рода *Maro* и новые находки 11 видов. Род *Maro* содержит 4 вида в фауне Урала: *M. minutus* O. Pickard-Cambridge, 1906, *M. pansibiricus* Tanasevitch, 2006, *M. sibiricus* Eskov, 1980 and *M. sublestus* Falconer, 1915. Два вида *Porrhomma microcavense* (Blackwall, 1856) и *Troxochrota scabra* Kulczyński in Chyzer et Kulczyński, 1894 впервые указываются для России и три вида — для Урала.

This paper continues our series devoted to the study of the spider fauna of the Urals. Two species from genus *Maro* O. Pickard-Cambridge, 1906 have hitherto been reported in the fauna of Urals. Both of them wrongly were considered widely distributed on Urals. Actually appeared, that these species rare and the most part of their records are erroneous. According to the current data, 4 valid species occur in the our region. The goal of this paper is to publish results of the revise of Urals material on the given genus. In edition, I published some new faunistic records of 11 linyphiid species, 2 of which are new to the fauna of Russia and 3 to the fauna of the Urals. The material has been deposited in the collections of the Department of Zoology of the Perm State University (PSU).

Printed in 2008.

Check-list of linyphiid spiders

Agyneta simplicitarsis (Simon, 1884)

MATERIAL. Middle Ural: 5 ♂♂, 3 ♀♀ (PSU-4224), Perm Area, Kishert District, "Preduralie" Reserve, dry meadow, 20.VII.2007, T. Baiderina.

REMARKS. New to the Middle Urals. The known east border of this european species lies along the line Middle Cis-Urals (present data) — southern Tran-Urals [Esyunin, 2006] — East-Kazakhstan Area [Tanasevitch, 2005].

Agyneta tibialis Tanasevitch, 2005

A. tibialis Tanasevitch, 2005: 165, figs 1-8 (♂)

MATERIAL. Middle Ural: 1 ♂ (PSU-3866), Ekaterinbugr Area, Visimskii Reserve, forest, litter, 16.VI.2004, N.L. Ukhova; 3 ♂♂, 1 ♀ (PSU-4042), Perm Area, Gornozavodsk District, Basegi Reserve, elfin woodland, 08.VIII.1985, 09.VII.1990, S.L. Esyunin. North Ural: 1 ♂, Ekaterinburg Area, Severouralsk District, Denezhkin Kamen Reserve, Ryubel Mountain, 1300 m, mountain tundra with *Carex* and moss, 17-20.VI.1998, A. Ermakov; 1 ♂, same locality, Bolshoi Shegul'tan River, mountain taiga, 23.VIII.1999, A. Ermakov; 2 ♂♂, 1 ♀, same locality, Sharpinskaya Sopka Mountain, 1020 m, mountain grassy-moss tundra, VII.2005, A.Ermakov.

REMARKS. Early, this species was recorded for the Denezhkin Kamen Reserve by Esyunin [2006] as *A. ripariensis* Tanasevitch, 1984. New to the Urals. To the moment, *A. tibialis* was known from Altai Mts., South Siberia [Tanasevitch, 2005] and southern tundra of the Russian Plain [Tanasevitch, Koponen, 2007] only.

Ceratinella scabrosa (O. Pickard-Cambridge, 1871)

MATERIAL. South Ural: 1 ♂ (PSU-4326), Orenburg Area, 15 km S of Orenburg City, Grebeni, *Quercus-Tilia* forest, 29.V-12.VI.2007, V. A.Koz'minykh.

REMARKS. This trans-Eurasian species was known from many regions of Urals (Perm, Ekaterinburg and Chelyabinsk Areas, Bashkortostan) [Esyunin & Efimik, 1996] early. New to Orenburg Area.

Ceratinella wideri (Thorell, 1871)

MATERIAL. South Ural: 1 ♀ (PSU-3851), Chelyabinsk Area, Troitsk District, Troitskii Reserve, youngling *Betula* forest, 18.VII.2006, A.S. Shirpuzheva.

REMARKS. Early this trans-Eurasian species was known from North and Middle Urals [Esyunin & Efimik, 1996]. New to South Urals and Chelyabinsk Area.

Maro minutus O. Pickard-Cambridge, 1906

M. minutus: *S*aaristo, 1971: 470, figs 8–20 (♂♀)

MATERIAL. Middle Ural: 1 ♂ (PSU-4136), Perm Area, Chusovoi District, Sela, *Betula* forest with *Salix*, 24.VI.1996, N.S. Mazura; 1 ♂ (PSU-4137), Perm Area, Kishert District, "Preduralie" Reserve, broadleaved forest, 27.06.1983, S.L. Esyunin; 4 ♂♂, 1 ♀ (PSU-4135), Ekaterinburg Area, Kirovgrad District, Visimskii Reserve, multiherbaceous meadow, paludal birch forest, VII-IX.1992, T. Lokteeva.

REMARKS. The records of this species in the mountain regions of the Middle (Basegi Reserve) [Esyunin, 1991] and South (Iremel Mountain and Satka District) Urals [Esyunin et al., 1995] is erroneous and is applied in reality to *M. sibiricus* (see below). Similarly the records of this species in same localities of Perm Area [Esyunin & Efimik, 1996] and Bashkortostan [Efimik, 1995; Esyunin et al., 1995] is attributed in fact to *M. pansibiricus* (see below). The record of *M. minutus* in the Chelyabinsk Area [Polyanin & Pakhorukov, 1988] seems to be a misidentification (material lost).

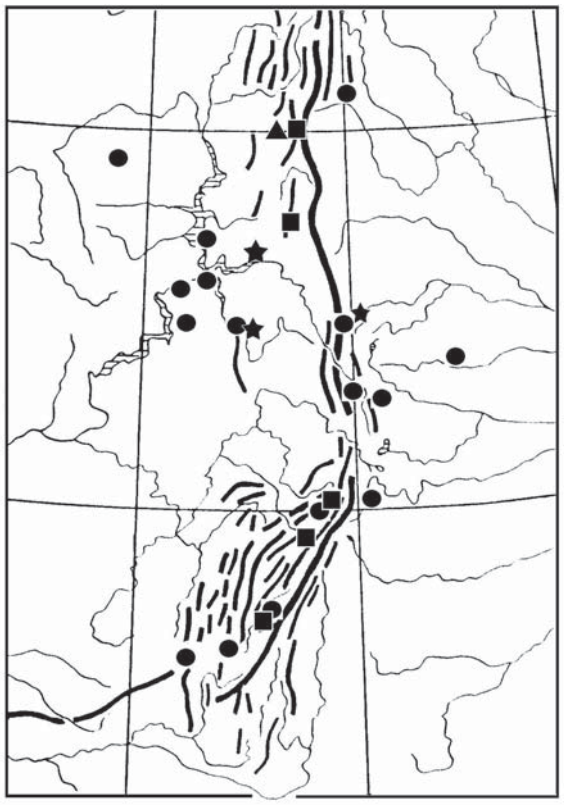
DISTRIBUTION. Urals: nemoral biotopes in the south taiga subzone (Map). European temperate range: Europe, Russian Plain.

Maro pansibiricus Tanasevitch, 2006

M. pansibiricus Tanasevitch, 2006a: 260, figs 1–9 (♂♀)

MATERIAL. North Urals: 1 ♀ (PSU-1770), Perm Area, Kochev District, Sepol, *Pinus-Picea* forest with red whortleberry (*Vaccinium vitis-idaea*) and green moss, 13.VIII.1999, V.E. Efimik; 1 ♂, 6 ♀♀, Ekaterinburg Area, Severouralsk District, Denezhkin Kamen Reserve, Sharpinskaya Sopka Mountain, 470 m, mountain taiga, VII.2005, A. Ermakov. Middle Urals: 5 ♂♂, 9 ♀♀ (PSU-4139), Perm Area, Dobryanka District, Bor-Lenva, *Picea* forest with whortleberry (*Vaccinium myrtillus*) and green moss, 03.VI–07.VIII.2006, M. Avraamova; 3 ♂♂, 3 ♀♀ (PSU-4130), environs of Perm City, Bol'shoe Savino, *Pinus* forest, IX–X.1988 & V.1989, S.L. Esyunin; 6 ♂♂ (PSU-2593), Perm Area, Perm District, Kachka, Picea forest, 12–22.VI.2002, S.L. Esyunin; 2 ♂♂, 1 ♀ (PSU-4132), Perm Area, Perm District, Yugo-Kamsk, mixed and *Betula-Tilia* forests, 06–14.VI.1995, Ritskova; 10 ♂♂, 26 ♀♀ (PSU-1999), Perm Area, Kishert District, "Preduralie" Reserve, coniferous and broadleaved forests, V–IX.1983, 1987, T.I. Gridina (as *M. sublestus*); 1 ♂ (PSU-4140), Perm Area, Kungur District, Zarubino, *Pinus* forest, 15.V.1995, T.I. Gridina (as *M. minutus*); 2 ♂♂, 1 ♀ (PSU-4131), Perm Area, Kungur District, Zuyata, *Pinus* forest with steppe vegetation, 11.V.1995, T.I. Gridina (as *M. sublestus*); 6 ♂♂, 8 ♀♀ (PSU-4134), Ekaterinburg Area, Kirovgrad District, Visimskii Reserve, *Betula-Pinus* and *Picea* forest, VI. 1990, S.L. Esyunin (as *M. sublestus*); 3 ♂♂, 4 ♀♀ (PSU-3607), Ekaterinburg Area, "Pripyshmenskie Bory" Reserve, *Pinus* forest, VI.2002, L.S. Shumilovskikh; 3 ♀♀ (PSU-4138), same locality, *Picea* forest, 01.VII.1997, D. Kazantsev; 2 ♂♂, 2 ♂♂ (PSU-2155), Ekaterinburg Area, Reft, *Pinus* forest with *Calamagrostis* and another herbs, 16–22.VIII.1989, E.L. Vorobeichik; 1 ♂, 2 ♀♀ (PSU-2156), Ekaterinburg Area, Pervouralskiy, *Picea* forest, 16.VI.1989, E.L. Vorobeichik. South Urals: 2 ♀♀ (PSU-4129), Bashkortostan, Zilair District, wet meadow, 15.VIII.1987, V.E. Efimik (as *M. sublestus*); 2 ♂♂ (PSU-4126), Bashkortostan, Burzyan District, Shulgan-Tash Reserve, *Populus tremula* and *Betula* forests, 22.VII–22.VIII.1989, V.E. Efimik (as *M. sublestus*); 2 ♂♂, 3 ♀♀ (PSU-4127), Bashkortostan, Burzyan District, Bashkirskii Reserve, *Pinus* and *Betula-Pinus* forests, 14–16.VI.1988, V.E. Efimik (as *M. sublestus*); 1 ♂, 2 ♂♂ (PSU-4428), same locality, *Pinus* forest with *Calamagrostis*, 14.VI.1988, V. Efimik (as *M. minutus*); 2 ♀♀ (PSU-4128), Bashkortostan, Meleuz District, Syrtlanovo, bank of Belaya River, 12.VIII.1990, V.E. Efimik (as *M. sublestus*); 1 ♀ (PSU-4120), Chelyabinsk Area, Tyulyuk, *Pinus* forest, 03.IX.1993, V.E. Efimik; 1 ♂, 1 ♀ (PSU-4119), Chelyabinsk Area, Satka District, Sibirka, *Pinus* forest with green moss, felling area, 20–30.VI.1984, V.E. Efimik (as *M. sublestus*); 8 ♂♂, 14 ♀♀ (PSU-4133), Chelyabinsk Area, Ilmenkii Reserve, *Pinus* forests with *Vaccinium* or *Calamagrostis* and another herbs, VI–VIII.1986, A.B. Polyanin (as *M. sublestus*).

REMARKS. New to the Urals. Distribution on the Urals see Map. This species displays a Siberian boreal pattern (Tanasevitch, 2006a).



Map. Distribution *Maro* species in the Urals: *M. minutus* O. Pickard-Cambridge, 1906 (asterisk), *M. pansibiricus* Tanasevitch, 2006 (circle), *M. sibiricus* Eskov, 1980 (square), *M. sublestus* Falconer, 1915 (triangle).

Карта. Распространение видов рода *Maro* на Урале: *M. minutus* O. Pickard-Cambridge, 1906 (звездочка), *M. pansibiricus* Tanasevitch, 2006 (круг), *M. sibiricus* Eskov, 1980 (квадрат), *M. sublestus* Falconer, 1915 (треугольник).

Maro sibiricus Eskov, 1980

M. sibiricus Eskov, 1980: 1101, figs 1–4 (♂♀)

MATERIAL. North Urals: 2 ♂♂, 3 ♀♀ (PSU-4123), Perm Area, Krasnovishersk District, Kvarkush Range, open woodland, 08.VII.1996, N.S. Mazura (as *M. minutus*). Middle Ural: 22 ♂♂, 21 ♀♀ (PSU-4121), Perm Area, Gornozavodsk District, "Basegi" Reserve, *Abies-Picea* forest with *Pteridium*, mountain meadow with *Salix*, *Betula* elfin woodland, mountain tundra with whortleberry (*Vaccinium myrtillus*) or lichen, VI–X.1984, 1985, 1990, S.L. Esyunin (as *M. sublestus* & *M. minutus*). South Urals: 1 ♂ (PSU-4429), Bashkortostan, Burzyan District, Shulgan-Tash Reserve, *Betula* forest, 11.IX.1989, V.E. Efimik (as *M. minutus*); 4 ♂♂ (PSU-4124), Chelyabinsk Area, Iremel Mountain, *Sphagnum* bog, 20.VI–28.VII.1993, A.V. Alikin (as *M. minutus*); 4 ♀♀, (PSU-4122), Chelyabinsk Area, Satka District, Sibirka, felling area, 20.VI.1984, V.E. Efimik (as *M. minutus*).

REMARKS. Originally this species was described from Yenisei River region (Middle Siberia) [Eskov, 1980]. Later it was recorded from tundra zone of the Europe in the west to Kamchatka, the Kurile Islands, Sakhalin and Far East in the east [Tanasevitch, 2006b].

Maro sublestus Falconer, 1915

M. sublestus: Saaristo, 1971: 472, figs 22–30 (♂♀)

MATERIAL. North Urals: 1 ♂ (PSU-4125), Perm Area, Krasnovishersk District, Kvarkush Range, mountain multiherbaceous meadow, 07–18.VII.1996, N.S. Mazura.

REMARKS. All previous records of this species for Urals are erroneous. The records of *M. sublestus* in the plain part of the Perm Area [Esyunin et al., 1995; Pakhorukov et al., 1995; Esyunin & Efimik, 1996; Kopytov, 2005] as well as in the piedmont regions of Ekaterinburg [Esyunin et al., 1995; Esyunin & Ukhova, 1996; Ukhova & Esyunin, 1996; Ukhova, 2001] and Chelyabinsk Areas [Pakhorukov & Polyanin, 1987; Polyanin & Pakhorukov, 1988; Esyunin et al., 1995] and Bashkortostan [Efimik, 1995a, 1997a; Efimik & Gulyashchikh, 1995; Esyunin et al., 1995] are applied in reality to *M. pansibiricus* (see above). Whereas the record of *M. sublestus* in mountain region of Perm Area [Esyunin, 1991] is attributed in fact to *M. sibiricus* (see above). The record of *M. sublestus* in the Pechora-Ilychskii (North Urals, Komi Republic) [Pakhorukov, 1980] and Visherskii Reserves (North Urals, Perm Area) [Esyunin & Efimik, 1996a] not revision (material lost).

DISTRIBUTION. European temperate range: Europe, Russian Plain.

Peponocranium praeceps Miller, 1943

MATERIAL. Middle Ural: 1 ♂, 1 ♀ (PSU-4141) Perm Area, Dobryanka Distr., Polazna, steppe meadow, 27.V.2007, S.L. Esyunin.

REMARKS. Early this european nemoral species was known from South Urals: Bashkortostan and Chelyabinsk Area [Esyunin & Efimik, 1996]. New to Middle Urals and Perm Area.

Porrhomma microcavense Wunderlich, 1990

P. microcavense Wunderlich, 1990: 164, figs 1–5 (♂♀)

MATERIAL. Middle Ural: 1 ♂, 2 ♀♀ (PSU-4071) Perm Area, Kungur Distr., Spasskaya Gora Preserve, *Betula-Tilia* forest, birch forest with steppe grass, steppe station on southern slope, 15.IX–23.X.1988, 26.IX.1990, S.L. Esyunin.

REMARKS. New to the Russian fauna. This is the easternmost record of this species hitherto known from Central and East Europe.

Sintula corniger Wunderlich, 1990

S. corniger Wiehle, 1961: 183, Abb. 19–26 (♂♀)

MATERIAL. Middle Ural: 1 ♂ (PSU-4071) Ekaterinburg Area, environs Revda Town, summer 2006, M. Zolotarev.

REMARKS. New to the Urals. This is the easternmost record of this european nemoral species.

Stemonyphantes altaicus Tanasevitch, 2000

S. altaicus Tanasevitch, 2000: 244, figs 1–5 (♂♀)

MATERIAL. South Ural: 1 ♂ (PSU-4305), Orenburg Area, 3 km EN of Orenburg City, Pervomayskiy, *Stipa* steppe, 20.V–04.VI.2007, V.A. Koz'minykh.

REMARKS. This species was originally description from the Altai [Tanasevitch, 2000]. The above locality is the westernmost records of the species. New to the Urals.

Thyreostenius biovatus (O. Pickard-Cambridge, 1875)

MATERIAL. South Ural: 2 ♂♂ 1 ♀ (PSU-3697), Chelyabinsk Area, Troitsk District, Uy River, shrub on sand bank of river, 08–20.VII.2006, S.L. Esyunin; 3 ♂♂, 3 ♀♀ (PSU-2827), Orenburg Area, Kuvandyk District, bottom land of Ural River, poplar (*Populus*) forest, 17–24.V.1997, S.L. Esyunin.

REMARKS. Early this trans-Eurasian species was known from Perm Area and Bashkortostan [Esyunin & Efimik, 1996] of Urals. New to Orenburg and Chelyabinsk Areas.

Troxochrota scabra Kulczyński in Chyzer et Kulczyński, 1894

T. scabra Kulczyński in Chyzer & Kulczyński, 1894: 125, pl. 4, fig. 49, pl. 5, fig. 5 (♂♀).

Cnephalocotes pectinatus Tullgren, 1955: 311, fig. 16a–f (♂♀).

Ceratinops pectinata: Palmgren, 1976: 46, figs 17: 4–7 (♂♀).

MATERIAL. South Ural: 3 ♂♂ 8 ♀♀ (PSU-3613, 4187), Perm Area, Dobryanka District, Bor-Lenva, *Picea* forest with green moss and whortleberry (*Vaccinium myrtillus*), VIII.2005, VI & VIII.2006, M. Avraamova.

REMARKS. New to the Russian fauna. This is the easternmost record of this european species, whose east border was known from Estonia [Mikhailov, 1997] early.

Walckenaerianus esyunini Tanasevitch, 2004

MATERIAL. South Urals: 1 ♂ (PSU-3864), Chelyabinsk Area, Troitsk District, Troitskii Reserve, saline land, VII.2006, A. Elysheva.

REMARKS. This is a second record of this species in the Urals. It was recently description from the Orenburg Area [Tanasevitch, 2004]. New to Chelyabinsk Area.

ACKNOWLEDGEMENTS. I am most grateful to all colleagues who supplied us with material. This work was supported in part by the Russian Foundation for Basic Research (projects ## 04-04-96000 & 07-04-96001).

References

Efimik V.E. 1995. [Spiders (Aranei) of the Bashkirian State Reserve] // Fauna i ekologiya paukov. Perm. 1994. P.98–116 [in Russian].

Efimik V.E. 1997. [Biotopical distribution of the Bashkirian spiders] // Vestnik Perm. un-ta. No.3. P.128–138 [in Russian].

Efimik V.E., Gulyashchikh E.V. 1995. [Spider fauna of the pine-broadleaved forests of the South Urals] // Fauna i ekologiya

paukov. Perm (for 1994). P.116–131 [in Russian].
Eskov K.Yu. 1980. [Two new species of spiders of the genus *Maro* (Aranei, Linyphiidae) from Siberia] // Zool. Zhurn. Vol. 59. No 7. P. 1100–1103 [in Russian].
Esyunin S.L., 1991. [Arachnids of the "Baseghi" Reserve (Pseudoscorpiones, Opiliones, Aranei, Parasitiformes: Ixodidae) – an annotated check list] // Flora i fauna zapovednikov SSSR. Moscow. No.38. P.3–38 [in Russian].
Esyunin S.L. 2006. Remarks on the Ural spider fauna (Arachnida: Aranei). 11. New faunistic records // Arthropoda Selecta. Vol.14 (for 2005). No.4. P.329–337.
Esyunin S.L., Efimik V.E. 1996. Catalogue of the spiders (Arachnida, Aranei) of the Urals. Moscow: KMK Scientific Press Ltd. 229 p.
Esyunin S.L., Efimik V.E., Polyanin A.B. 1995. Remarks on the Ural spider fauna, 5. New records of spider species of the family Linyphiidae from the Urals (Arachnida Aranei) // Arthropoda Selecta. Vol.4. No 2. P.49–71.
Esyunin S.L., Ukhova N.L. 1996. [Zoogeographical composition of spider fauna of Visimskii Reserve] // Problemy zapovednogo dela. Ekaterinburg. P.47–48 [in Russian].
Kopytov A.V. 2005. [The investigation of invertebrate mezofauna of some biogenesis of training base "Preduralie"] // Fundamentalnye i prikladnye issledovaniya v biologii i ekologii. Perm. P.74–76 [in Russian].
Chyzer C., Kulczynski W. 1894. Araneae Hungariae. Budapest: Ed. Acad. Sci. Hungar. T.2. Pars 1. Theridioidae. P.1–151.
Mikhailov K.G. 1997. Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei). Moscow: Zool. Mus. Moscow State Univ. Press. 416 p.
Pakhorukov N.M. 1980. [Spiders of the Yaksha profile] // Vzaimosvyazi komponentov lesnykh i bolotnykh ekosistem sredney taigi Priuralya. Leningrad: Nauka Publ. P.160–171 [in Russian].
Pakhorukov N.M., Esyunin S.L., Polyanin A.B. 1995. [Spider fauna (Arachnida: Aranei) of the Research Forestry "Preduralye"] // Fauna i ekologiya paukov. Perm. (for 1994). P.25–38 [in Russian].
Pakhorukov N.M., Polyanin A.B. 1987. [Materials on the spider fauna of the Ilmenski Reserve] // Fauna, ekologiya bespozv. zhivotnykh Chelyabinskoy oblasti. Sverdlovsk. P.13–21 [in Russian].
Palmgren P. 1976. Die Spinnenfauna Finnlands und Ostfennoskandiens, VII. Linyphiidae 2 // Fauna Fennica. Bd. 29. P. 1–126.
Polyanin A.B., Pakhorukov N.M. 1988. [The spider fauna of the forest zone of southern Transuralia] // Fauna i ekologiya paukoobraznykh. Perm. P.61–80 [in Russian].
Saaristo M. 1971. Revision of the genus *Maro* O.P.-Cambridge (Aranei, Linyphiidae) // Ann. Zool. Fennici. Vol.8. P.463–482.
Tanasevitch A.V. 2000. New species of the family Linyphiidae from South Siberia, Russia (Arachnida: Araneae) // Reichenbachia. Bd.33. H.31. S.243–253.
Tanasevitch A.V. 2004. Two new erigonine spiders from the steppe of the East European Plain (Aranei: Linyphiidae: Erigoninae) // Arthropoda Selecta. Vol.13. No.1–2. P.63–67.
Tanasevitch A.V. 2005. New or little-known species of *Agyneta* and *Nippononeta* from Asia (Aranei: Linyphiidae) // Arthropoda Selecta. Vol.13 (for 2004). No.3. P.165–170.
Tanasevitch A.V. 2006a. New or little-known *Maro* O.P.-Cambridge from Siberia and the Russian Far East (Aranei: Linyphiidae: Micronetinae) // Arthropoda Selecta. Vol.14 (for 2005). No.3. P.259–268.
Tanasevitch A.V. 2006b. Linyphiid spiders of the Norsky Nature Reserve, Amurskaya Area, Russian Far East (Arachnida: Aranei) // Arthropoda Selecta. Vol.14 (for 2005). No.4. P.339–345.
Tanasevitch A.V., Koponen S. 2007. Spiders (Aranei) of the southern tundra in the Russian Plain // Arthropoda Selecta. Vol.15 (for 2006). No 4. P.295–345.
Tullgren A. 1955. Zur Kenntnis schwedischer Erigoniden // Arkiv för Zoologi. Bd.7. H.20. S.295–389.
Ukhova N.L. 2001. [The structure of population and abundance of soil mezofauna in native and derivative biotopes of Visimskii Reserve] // Issledovaniya etalonnykh prirodn. kompleksov Urala. Ekaterinburg. P.409–439 [in Russian].
Ukhova N.L., Esyunin S.L. 1996. [To the arachnid fauna (Arachnida) of Visimskii Reserve] // Problemy zapovednogo dela. Ekaterinburg. P.110–112 [in Russian].
Wiehle H. 1961. Beiträge zur Kenntnis der Deutschen Spinnenfauna II // Mitt. Zool. Mus. Berlin. Bd.37. H.2. S.171–188.
Wunderlich 1990. *Porrhomma microcavense* n.sp. aus Deutschland (Arachnida: Araneae: Linyphiidae) // Entomol. Z. Bd.100. H.9. S.164–168.