

UDC 595.44(477.7)

A NEW URALOPHANTES FROM THE SOUTH UKRAINE (ARANEAE, LINYPHIIDAE, IPAEINAE)

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A New *Uralophantes* from the South Ukraine (Araneae, Linyphiidae, Ipaeinae). Gnelitsa, V. A. — A Linyphiidae spiders *Uralophantes ponticus* sp. n. from Ukraine (Kherson, Sumy, Luhansk Regions) and Russia (Penza Region), differing from *U. troitskensis* Esyunin, 1992 from the Southern Urals by the male palp parts and female epigynum, is described.
Key words: Ukraine, spiders, Linyphiidae, *Uralophantes*, new species, description.

Introduction

Uralophantes troitskensis Esyunin, 1992 was described from the Troitsky Nature Reserve (South Urals, Russia). Later, Polchaninova (2012, 2015) reported on finding *U. troitskensis* Esyunin, 1992 from two localities in Rybalche village of Kherson Region and Krynichne village of Luhansk Region (Ukraine) located more than 2000 km WSW of its type locality.

Recently, *Uralophantes* spiders I recollected in Kherson Region revealed good distinctions from *U. troitskensis* Esyunin, 1992. It clearly belonged to an undescribed new species described below, along with some material previously misidentified as *U. troitskensis*.

Material and methods

Author collected specimens by the using a hand-held aspirator. Identification was made with a binocular microscope MBS-10; drawings were made with a camera lucida.

Abbreviations of the names of palp and epigynum structures follow Merrett (1963), Hormiga (2000), Millidge (1984), and Saaristo & Tanasevitch (1996).

Palp parts: AA1 — first anterior apophysis, AA2 — second anterior apophysis, AM1 — first anterior membrane, AP — paracymbium apical part, EP — embolus proper, FG — Fickert's gland, MM — median membrane, MP — paracymbium middle part, Pc — paracymbium, PP — paracymbium proximal part, R — radix, RL — radical lamella, St — subtegulum, T — tegulum.

Epigynum: BE — median beam, DF — dorsal flanks, FG — fertilization groove, PMP — posterior median plate, VF — ventral flanks, VP — ventral plate.

Another abbreviations: BH — basal hook of the first anterior apophysis, BS — embolus basal sclerite, C — cymbium, d — dorsal, EC — embolus complex, Fe — femur, l — lateral, LL — embolus lateral lobe, MB — main branch of the first anterior apophysis, Mt — metatarsus, p — prolateral, PA — embolus posterior appendix, r — retrolateral, RFA — appendix of radix frontal edge, SB — secondary branch of the first anterior apophysis, Ti — tibia.

Collections:

SIZK — I. I. Schmalhausen Institute of Zoology, Kyiv.

VGC — Valery Gnelitsa personal collection.

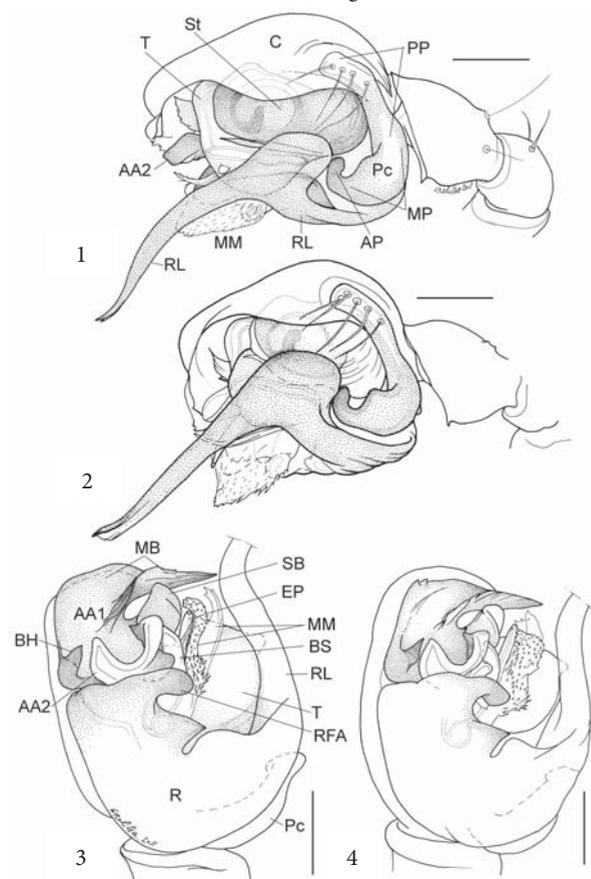
Maps were made in Simple Mappr (<http://www.simplemappr.net>). All measurements are in millimetres.

Results

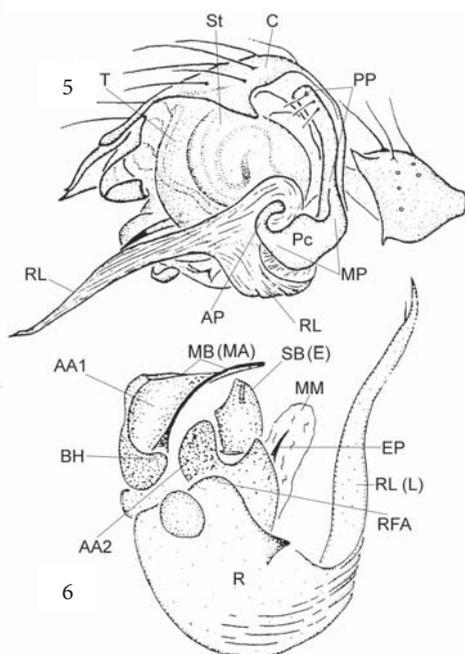
Uralophantes ponticus, sp. n. (figs 1, 2, 5, 6, 8–16, 21–23, 25, 29)

Material. Type. Holotype ♂: **Ukraine**, Kherson Region, Hola Pristan' District, 46.4320° N, 32.0646° E, 6 km North-North-West of Ivaninka village, bank of the freshwater lake, in dead dry *Carex* near the water, 26.04.2009

(Gnelitsa) (SIZK). **Paratypes.** 2 ♀, idem. **Non-type. Ukraine:** Luhansk Region, Melovsky District, Krynychne village, Strilitsivskiyi Steppe section of the Luhansk Nature Reserve, 49.2834° N, 40.0000° E, ♂ (Polchaninova) (VGC); Sumy Region, Krasnopilsky District, Hrunivka village, 50.9918° N, 35.1159° E, 2 ♂, 4 ♀, forb grass patch on motley grass meadow, in litter, 20.07.2021



Figs 1–4. *U. ponticus* sp. n. male palp lateral: 1 — Kherson Region; 2 — Penza Region; ventral: 3 — Kherson Region; 4 — Penza Region. Scale 0.1 mm.



Figs 5, 6. *U. troitskensis* (after Esyunin, 1992): 5 — male palp lateral; 6 — embolic division ventral. Scale 0.1 mm.

Table 1. *Uralophantes ponticus* sp. n. male: length of leg joints

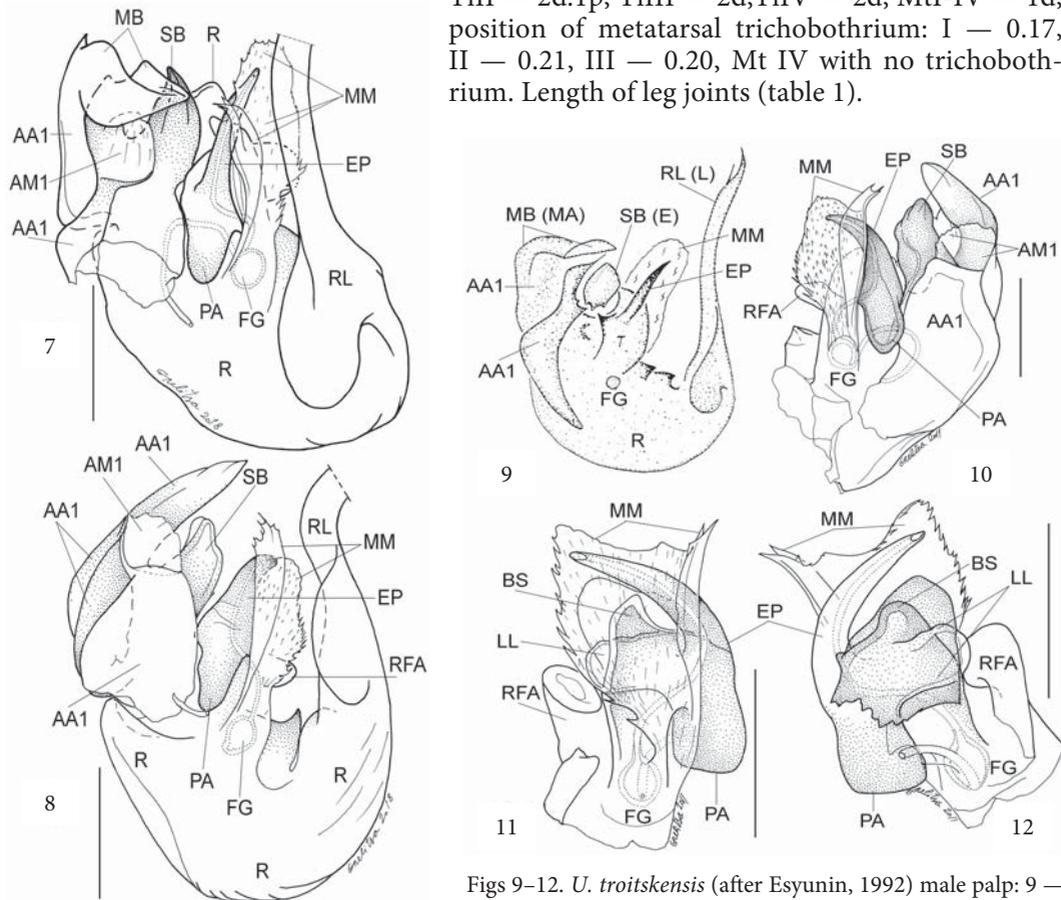
	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	0.98	0.25	0.97	0.87	0.74	3.81
II	0.88	0.21	0.77	0.74	0.62	3.22
III	0.70	0.20	0.52	0.53	0.43	2.38
IV	0.92	0.21	0.83	0.78	0.59	3.33

(Gnelitsa) (VGC). **Russia:** Penza Region, Kameshkyr District, Krasnaya Polyana village, Privolzhskaya Steppe Nature Reserve, 53.3389° N, 46.8653° E, 3 ♂, 1 ♀ (Polchaninova) (VGC); Kolyshley District, Berezovka village, 52.7738° N, 44.5174° E (N. Polchaninova, pers. comm.).

Etymology. The species name is derived from its type locality on the shore of Black Sea (Greek Πόντος Εύξεινος).

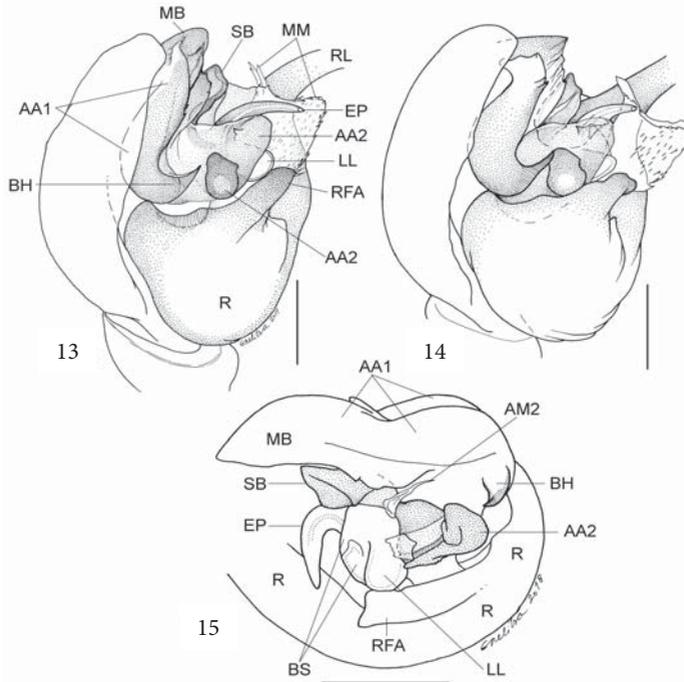
Diagnosis. The new species is similar to *U. troitskensis* differing by the male palp parts and female epigynum as summarized in table 3.

Description. Male: carapace 0.84 long, 0.64 wide, yellow with no dark pattern dorsally. Posterior median eyes are separated 0.8 their diameter. Sternum 0.42 long and 0.42 wide extended between coxae IV, knobbly near the margin, yellow and brown-yellow to the border. Chelicera outer margin with two – three teeth, rare margin with three small teeth close together; stridulating striae are distinctive visible laterally. Legs spination: FeI – 1l; TiI – 2d:1p:1r; TiII – 2d:1p; TiIII – 2d; TiIV – 2d; MtI-IV – 1d; position of metatarsal trichobothrium: I – 0.17, II – 0.21, III – 0.20, Mt IV with no trichobothrium. Length of leg joints (table 1).

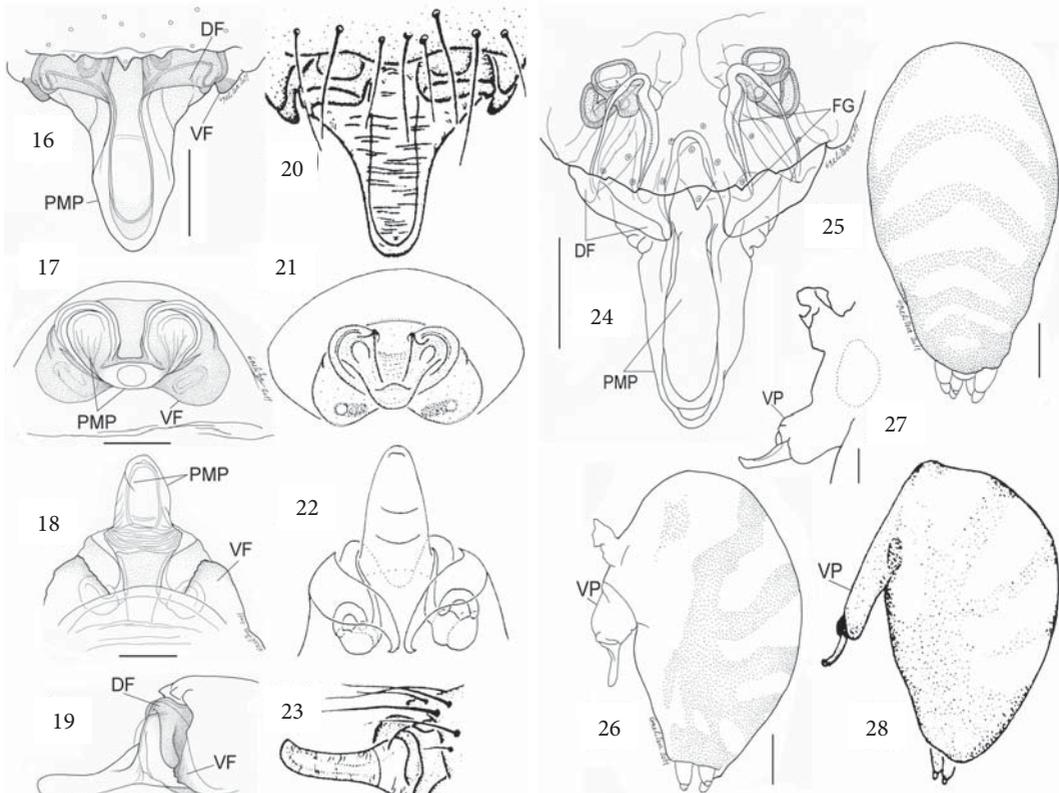


Figs 7, 8. *U. ponticus* sp. n. embolic division from inside: 7 – ventral-apical; 8 – ventral. Scale 0.1 mm.

Figs 9–12. *U. troitskensis* (after Esyunin, 1992) male palp: 9 – embolic division from inside; *U. ponticus* sp. n.: 10 – embolic division from the first anterior apophysis (radix partially removed); 11 – embolus from the median membrane; 12 – embolus from the embolus proper. Scale 0.1 mm.



Figs 13–15. *U. ponticus* sp. n. male palp: mesal: 13 — Kherson Region; 14 — Penza Region; 15 — apical. Scale 0.1 mm.



Figs 16–23. Epigynum: *U. ponticus* sp. n.: 16 — ventral; 17 — caudal; 18 — dorsal; 19 — lateral; *U. troitskensis* (after Esyunin, 1992): 20 — ventral; 21 — caudal; 22 — dorsal; 23 — lateral. Scale 0.1 mm.

Figs 24–28. *U. ponticus* sp. n.: 24 — vulva ventral; 25 — female abdomen dorsal; 26 — female abdomen lateral (Kherson Region), epigynum lateral (Penza Region); *U. troitskensis* (after Esyunin, 1992): 28 — female abdomen lateral. Scale 0.1 mm.

Table 2. *Uralophantes ponticus* sp. n. female: length of leg joints

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.06	0.22	1.01	0.92	0.69	3.90
II	0.95	0.22	0.84	0.77	0.58	3.36
III	0.73	0.20	0.56	0.56	0.40	2.54
IV	1.02	0.21	0.87	0.80	0.56	3.46

Abdomen yellow with grey transverse separated strips.

Palp as in figs 1–4, 7, 8, 10–15. Paracymbium (figs 1, 2) consists of three parts: proximal (PP), middle (MP) and apical (AP). The proximal part (PP) is with almost parallel sides, its proximal moiety somewhat curved ahead bears few long spines. The middle part (MP) is widened dorso-ventrally with convex upper side and rounded lower edge, narrowed apical part (AP) curved upwards.

Radix (R) is a large triangle sclerite with the first angle directed backwards, the second angle tends forward toward cymbium, the third one extends into radical lamella (RL) figs 3, 4, 7, 8, 13, 14. The frontal edge of radix bears a finger-shaped appendix (RFA) figs 3, 4, 13–15. The robust tooth is placed between appendix of the radical frontal edge (RFA) and the radical lamella (RL) figs 3, 4.

Radical lamella (RL) consists of long narrow branch divided at the apex curved down gradually and the short wide branch with a rounded end part oriented opposite the long one figs 1, 2.

Forward of the radix the first anterior apophysis (AA1) is located figs 3, 4, 7, 8, 10, 13–15. The apophysis on its wide and flattened base is provided with a basal hook (BH) figs 3, 4, 13, 14.

Distally AA1 splits into large main branch (MB) figs 3, 4, 6, 7, 14, 15 (former “MA” of Esyunin (1992)) and the small secondary branch (SB) figs 2, 5, 6, 8, 9, 12 (former “E” of Esyunin (1992)). Flattened first, then main branch (MB) gradually becomes narrowed trough tapered distally. AA1 secondary (lower) piece (SB) is covered partially with moderate size sclerite — second anterior apophysis (AA2) figs 3, 4, 13–15. Membrane (AM1) is visible at the inner side of the AA1 base figs 7, 8, 10.

Table 3. Main features of the species

	<i>U. troitskensis</i>	<i>U. ponticus</i> sp. n.
Male		
Paracymbium apical part, AP	elongated, curved in half ring, directed to lower piece of paracymbium proximal part, PP (fig. 5)	shortened, directed to upper piece of paracymbium proximal part, PP (figs 1, 2)
Paracymbium proximal part, PP	narrow and elongated (fig. 5)	broadened (figs 1, 2)
First anterior apophysis, AA1	wide appendix at the base, BH with rounded end (fig. 6)	pointed hook like appendix at the base, BH (figs 3, 4, 13, 14)
Radix, R	appendix of the distal edge, RFA undeveloped (fig. 6)	slightly curved finger shape appendix of the distal edge, RFA directed to radix lamella, RL (figs 3, 4, 13, 14)
Radix, R	cut of the distal edge between the tooth and radical lamella is rounded (fig. 9)	cut of the distal edge between the tooth and radical lamella is narrow (figs 3, 4, 8)
Radix, R	rounded outgrowth near distal edge downwards of AA2 (fig. 6)	no outgrowth at this part of radix (figs 3, 4)
Embolus	embolus (“T” — after Esyunin, 1992) with distinct tooth like appendage near the base of embolus proper, EP (fig. 9)	embolus with any tooth like appendage near the base of embolus proper, EP (figs 7, 8)
Female		
Epigynum	ventral plate long and narrow (fig. 28)	ventral plate short and robust (figs 26, 27)
Femur/carapace length equation	FeI is 1.40 carapace length	FeI is 1.16 carapace length

AA2 lateral outgrowth is situated at the side of BH figs 3, 4, 13, 14. The main part of AA2 covers the base of the embolus proper (EP) figs 13, 14. Bare noticeable narrow membrane (AM2) grows from the base of AA2 fig. 15.

Oval shape Fickert's gland is visible between RFA and tooth of the radix (figs 3, 4) at the place of the radix from which median membrane (MM) originates figs 7, 8, 10, 11.

Complex embolus consists of basal sclerite (BS), lateral lobe (LL), embolus proper (EP) and posterior appendix (PA) figs 11, 12. Widened basal sclerite (BS) partially prolates distally figs 11, 12. Lateral lobe (LL) flattened and rounded at the end figs 9–12 arises from the side of BS fig. 12. Posterior appendix (PA) figs 7, 8, 10–12 resembles radical tailpiece (Hormiga, 2000) goes opposite to claw shape elongated embolus proper (EP) figs 7, 8, 10–12.

Female: total length 1.78. Carapace 0.83 long, 0.62 wide, pale brown-yellow with slightly darker margin. Posterior median eyes bordered with black are separated by their diameter. Sternum 0.48 long and 0.43 wide, yellow-gray gradually darkened to the border. Chelicera outer margin with three teeth: two large and a small one, rear margin with four teeth diminished distally, stridulating striae as in male. Legs spination: FeI — 1l, TiI — 2d:1p:1r, TiII — 2d:1p, TiIII — 2d, TiIV — 2d, MtI-IV — 1d; position of metatarsal trichobothrium: I — 0.18, II — 0.20, III — 0.21, no trichobothrium on MtIV. Length of leg joints (table 2).

Abdomen yellow with the pattern of gray separate transverse stripes merged at the sides of abdomen fig. 25.

Epigynum as in figs 16–19, 26, 27; vulva as in fig. 24. Median beam (BE after Saaristo, 2007) of the epigynum is reduced so the fertilization grooves (FG) start close to the caudal edge of the ventral plate (VP) fig. 24. Ventral plate (VP) is short and robust figs 26, 27.

Elongated posterior median plate (PMP) is straight figs 19, 26, 27. The dorsal (DF) and ventral (VF) flanks are noticeable figs 16, 18, 19, 24.

Biology. The species prefer meadows especially near the freshwater lakes and reservoirs (author's data), yet sporadically can be caught in grass of forb steppe and in patch forests with birch (Polchaninova, Prokopenko, 2013, 2017).

Distribution. The species is known from the Steppe and Wood-and-Steppe zones of the Eastern European plain fig. 29.



Fig. 29. Distribution data: *U. ponticus* sp. n. — solid triangle; *U. troitskensis* Esyunin, 1992 — solid circle (data confirmed); open circle (data need to be confirmed).

Comments: *U. troitskensis* Esyunin, 1992 from Chornomorsky Biosphere Reserve: Ukraine: Kherson Region, Hola Pristan District, 5 km North wards Ivanivka village (Polchaninova, 2012) refers to *U. ponticus* sp. n.

U. troitskensis Esyunin, 1992 (figs 5, 6, 9, 20–23, 28, 29)

Distribution. Russia: type locality: Cheliabinsk Region, Troitsk District, 10 km South of Berlin settlement, Troitskiy Wood-and-Steppe sanctuary, 53.9381° N, 61.2265° E (Esyunin, 1992); Orenburg Region, Sol-Iletsk District, Chybynda cavin, 50.9334° N, 54.8499° E (Esyunin, Tuneva & Farzalieva, 2007); Orsk (S. Esyunin, pers. comm.); Rostov Region, Ust'-Donetsk District, 12 km to the East of Veshenskaya settlement, Razdorskaya settlement vicinity, Atamanskaya gully, 47.5489° N, 40.6537° E (Ponomarev et al., 2017); Lebyazhinsky Khutor vicinity, 49.6040° N, 41.9143° E (Ponomarev et al., 2017) fig. 29.

Biology. The specimens were captured in litter of dry open places (Esyunin, 1992; Ponomarev et al., 2017), on the grass in patch forest with birch (Azheganova, 1951).

Comments: Data on *U. troitskensis* Esyunin, 1992 in both Cheliabinsk and Orenburg Regions were confirmed by Sergey Esyunin. For the rest points in Russia, the correctness of identification of *U. troitskensis* Esyunin, 1992 need corroboration.

Discussion. Drawings of *U. troitskensis* male palp, although being somewhat schematic, nonetheless are accurate enough for comparison of two *Uralophantes* species. Judging from the figures certain palp parts of *U. troitskensis* differ in structure from those of *U. ponticus* sp. n. or entirely absent of all examined specimens of the new species. Beside that the palps of *U. ponticus* sp. n. from remote places (Sumy, Kherson, and Penza Regions) are quite conservative in their structure. Thus I consider *U. ponticus* sp. n. to differ considerably from *U. troitskensis* not representing a case of intraspecific variability of the last one.

I thank Nina Polchaninova (Kharkiv, Ukraine), who kindly provided specimens from Luhansk Region (Ukraine) and Penza Region (Russia), and Sergey Esyunin (Perm, Russia) for unpublished data on *U. troitskensis* Esyunin, 1992 distribution.

References

- Azheganova, N. S. 1951. To the spider fauna of the Troitsky Forest-Steppe Reserve. *Izvestija Yestestvenno-Nauchnogo Instituta pri Molotovskom Gosudarstvennom Universitete*, **13** (2–3), 137–156.
- Esyunin, S. L. 1992. Remarks on the Ural spider (Arachnida, Aranei) fauna. 2. A new genus and a new species of the family Linyphiidae. *Zoologicheskij Zhurnal*, **71** (12), 136–139.
- Esyunin, S. L., Tuneva T. K., Farzalieva G. S. 2007. Remarks on the Ural spider fauna (Arachnida, Aranei), 12. Spiders of the steppe zone of Orenburg Region. *Arthropoda Selecta*, **16**, 43–63.
- Hormiga, G. 2000. Higher Level Phylogenetics of Erigonine Spiders (Araneae, Linyphiidae, Erigoninae). *Smithsonian Contributions to Zoology*, 1–160.
- Merrett, P. 1963. The palpus of male spiders of the family Linyphiidae. *Proceedings of the Zoological Society of London*, **140**, 347–467.
- Millidge, A. F. 1984. The taxonomy of the Linyphiidae, based chiefly on the epigynal and tracheal characters (Araneae: Linyphiidae). *Bulletin of the British Arachnological Society*, **6**, 229–267.
- Polchaninova, N. Yu. 2012. A checklist of spiders (Araneae) of the Chornomorskyi Biosphere Reserve (Ukraine). *Pryrodnychiy almanakh. Biolohichni nauky*, **18**, 85–108.
- Polchaninova, N. Yu. 2015. Recovery of spider communities after a spontaneous summer fire in the forb-bunchgrass steppe of eastern Ukraine. *Hacquetia*, **14** (1), 79–96.
- Polchaninova, N. Yu., Prokopenko, E. V. 2013. Catalogue of the spiders (Arachnida, Aranei) of Left-Bank Ukraine. *Arthropoda Selecta, Supplement*, **2**, 1–268.
- Polchaninova, N. Yu., Prokopenko, E. V. 2017. Catalogue of the spiders (Arachnida, Aranei) of Left-Bank Ukraine. Addendum 1. 2013 – 2016. *Arthropoda Selecta, Supplement*, **4**, 1–115.
- Ponomarev, A. V., Prokopenko, E. V., Shmatko, V. Yu. 2017. New and interesting records of spiders (Arach-

- nida: Aranei) from the southeastern part of the Russian Plain. *Proceedings of the Russian Entomological Society*, **88** (1), 103–117.
- Saaristo, M. I. 2007. A new subfamily of linyphiid spiders based on a new genus created for the *keyserlingi*-group of the genus *Lepthyphantes* (Aranei: Linyphiidae). *Arthropoda Selecta*, **16**, 33–42.
- Saaristo, M. I., Tanasevitch, A. V. 1996. Redelimitation of the subfamily Micronetinae Hull, 1920 and the genus *Lepthyphantes* Menge, 1866 with descriptions of some new genera (Aranei, Linyphiidae). *Berichte des naturwissenschaftlich-medizinischen Vereins in Innsbruck*, **83**, 163–186.

Received 13 September 2021

Accepted