

## A new *Trichoncoides* Denis, 1950 (Aranei: Linyphiidae) from a semi-desert in the Caspian Lowland

### Новый вид рода *Trichoncoides* Denis, 1950 (Aranei: Linyphiidae) из полупустыни Прикаспийской низменности

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KEY WORDS: Spiders, Linyphiidae, new species, semi-desert, steppe.

КЛЮЧЕВЫЕ СЛОВА: Пауки, Linyphiidae, новый вид, полупустыни, степи.

**ABSTRACT.** A new linyphiid species of the genus *Trichoncoides* is described from a clayey semi-desert in the environs of both Dzhanlybek, western Kazakhstan and Lake Elton, Volgograd Area, southern Russia. The new species is similar to *T. piscator* (Simon, 1884), but differs well by the peculiar shape of the palpal tibia, of the anterior radical process in the male, as well as by the details of epigyne and vulva structure in the female.

**РЕЗЮМЕ.** Из глинистой полупустыни в окрестностях пос. Джаныбек, Западный Казахстан и оз. Эльтон, Волгоградская обл., юг России описан новый вид пауков-линефиид из рода *Trichoncoides*. Вид близок к *T. piscator* (Simon, 1884), но хорошо отличается главным образом деталями строения голени пальпы самца, а также эпигины и эндоины самки.

#### Introduction

The Caspian Lowland covers a huge, mostly desert to semi-desert or steppe area lying northwest, north and northeast of the Caspian Sea within both Russia and western Kazakhstan [Milkov & Gvozdetsky, 1986]. It is from that region that 13 new linyphiid taxa (11 species and two genera) have recently been described [Tanasevitch, 1986, 1987, 1993, 2004; Tanasevitch & Piterkina, 2007; Gnelitsa, 2008; Gnelitsa & Ponomarev, 2010], suggesting a rich and peculiar spider fauna. This statement is further documented due to the discovery of a still one more new linyphiid found both in southern Russia and western Kazakhstan.

#### Region, Material and Methods

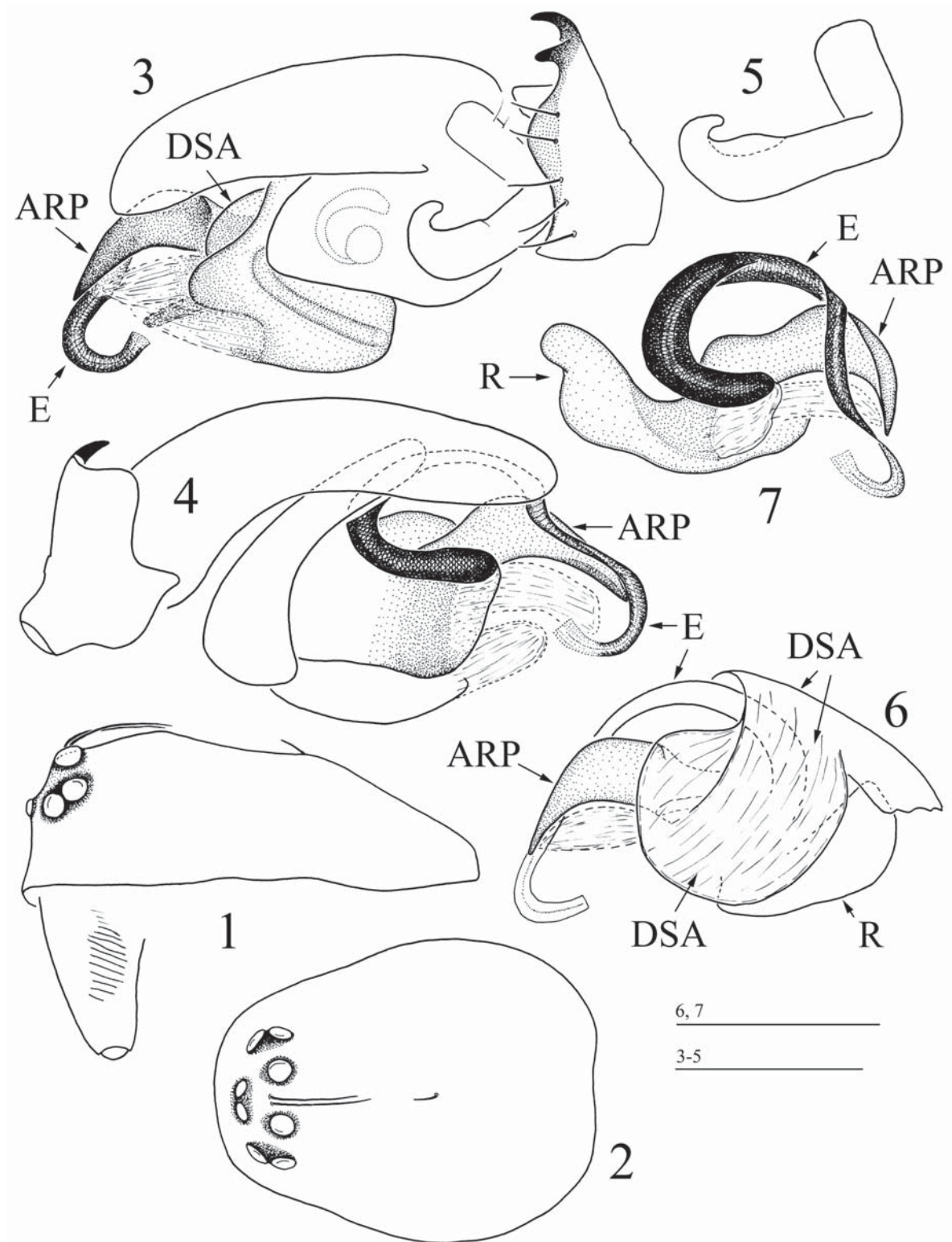
The paper is based on the spider material collected in 2004–2007 and 2011 in the environs of the Dzhanly-

bek Research Station of the Institute of Forestry, Russian Academy of Sciences, Western Kazakhstan Area, Kazakhstan, as well as in the environs of Lake Elton, Volgograd Area, Russia.

The study area occupies a flat plain in the northwestern Caspian Lowland, much of which supports the semi-desert belt [Milkov & Gvozdetsky, 1986]. This is the most arid territory of the Caspian semi-desert because of increased salinity and the absence of internal drainage. The area is characterized by a complex pattern of the soil and vegetation covers and is composed of mosaics of desert and steppe plant communities due to microrelief variation [Rode, 1971]. Desert habitats with *Kochia prostrata* and *Artemisia pauciflora* on solonch soils are associated with microelevations. Microdepressions (up to 0.4 m depth) provide steppe habitats with forb-grass vegetation (*Stipa* spp., *Festuca valesiaca*, *Agropyron cristatum*, etc.) on dark chestnut and meadow chestnut soils. Microslopes connect these elements and are occupied by typical semi-desert vegetation (*Agropyron desertorum*, *Tanacetum achilleifolium*, *Galatella villosa* etc.) on light chestnut soils. Forest stands formed by shelter-belts and small forest communities grow in the territory of the Dzhanlybek Station. Hyper-halophytic plant communities occupy salt-marshes on the banks of Lake Elton and small saline rivers discharging therein.

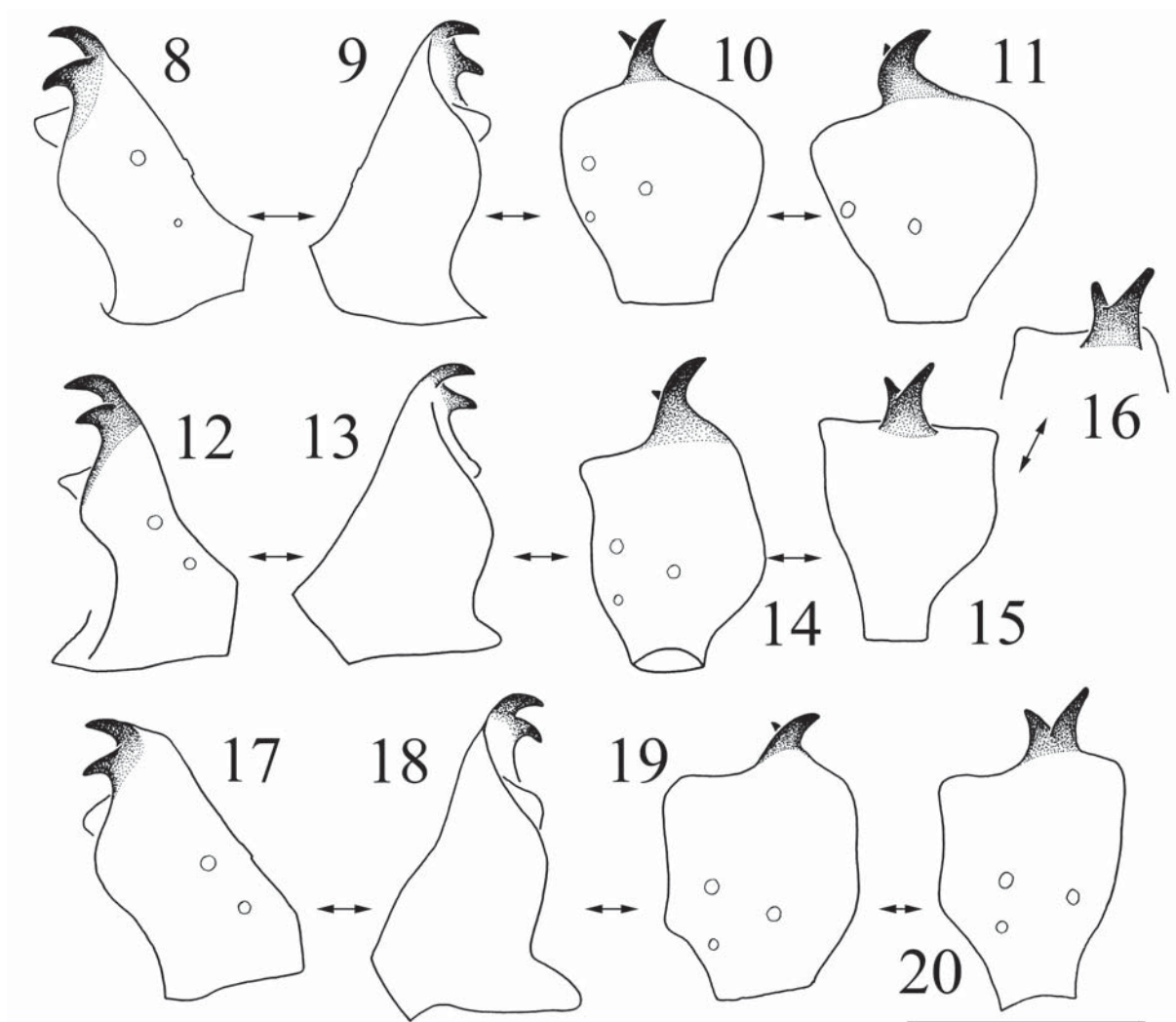
Spiders were collected using pitfall trapping and net sweeping.

In the descriptions, chaetotaxy is given by the following formula: 2.2.1.1, which refers to the number of dorsal spines on tibiae I–IV, respectively. The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. Scale lines in figures = 0.1 mm, unless otherwise indicated.



Figs 1–7. Male carapace & details of palp structure of *Trichoncoides striganovae* sp.n., paratype. 1, 2 — male carapace, lateral & dorsal views, respectively; 3, 4 — left palp, retro- & prolateral views, respectively; 5 — paracymbium; 6 — distal suprategular apophysis & embolic division; 7 — embolic division.

Рис. 1–7. Карапакс и детали пальпы самца *Trichoncoides striganovae* sp.n., паратип. 1, 2 — карапакс самца, сбоку и сверху, соответственно; 3, 4 — левая пальпа, ретро- и пролатерально, соответственно; 5 — парацимбиум; 6 — дистальный супратегулярный апофиз и эмболюсный отдел; 7 — эмболюсный отдел.



Figs 8–20. Palpal tibia of *Trichoncoides striganovae* sp.n., holotype (8–11) & paratypes (12–20). 8, 12, 17 — retrolateral view; 9, 13, 18 — prolateral view; 10, 11, 14–16, 19, 20 — dorsal view; 12–16 — specimen from Dzhanybek, Kazakhstan; 17–20 — specimen from Khara River, Russia (17 — shown in a slightly different aspect than in Figs 8 & 12).

Рис. 8–20. Голень пальпы самца *Trichoncoides striganovae* sp.n., голотип (8–11) и паратипы (12–20). 8, 12, 17 — ретролатерально; 9, 13, 18 — пролатерально; 10, 11, 14–16, 19, 20 — вид сверху; 12–16 — экземпляр из Джаныбека, Казахстан; 17–20 — экземпляр с р. Хара, Россия (17 — показан под другим углом, чем на рис. 8 и 12).

The names of the localities are given according to Google Earth.

The following abbreviations are used in the text and figures: ARP — anterior radical process; DSA — distal suprategular apophysis; E — embolus; MHNG — Muséum d'histoire naturelle, Geneva, Switzerland; R — radix; TmI — the position of the metatarsal trichobothrium; ZMMU — Zoological Museum of the Moscow State University.

Type specimens are shared between the collections of ZMMU and MHNG. Some more samples used here for comparative purposes are also housed in MHNG.

*Trichoncoides striganovae* sp.n.

Figs 1–20, 40–42, 46.

2009a *Trichoncoides* cf. *piscator* — Piterkina: 341.

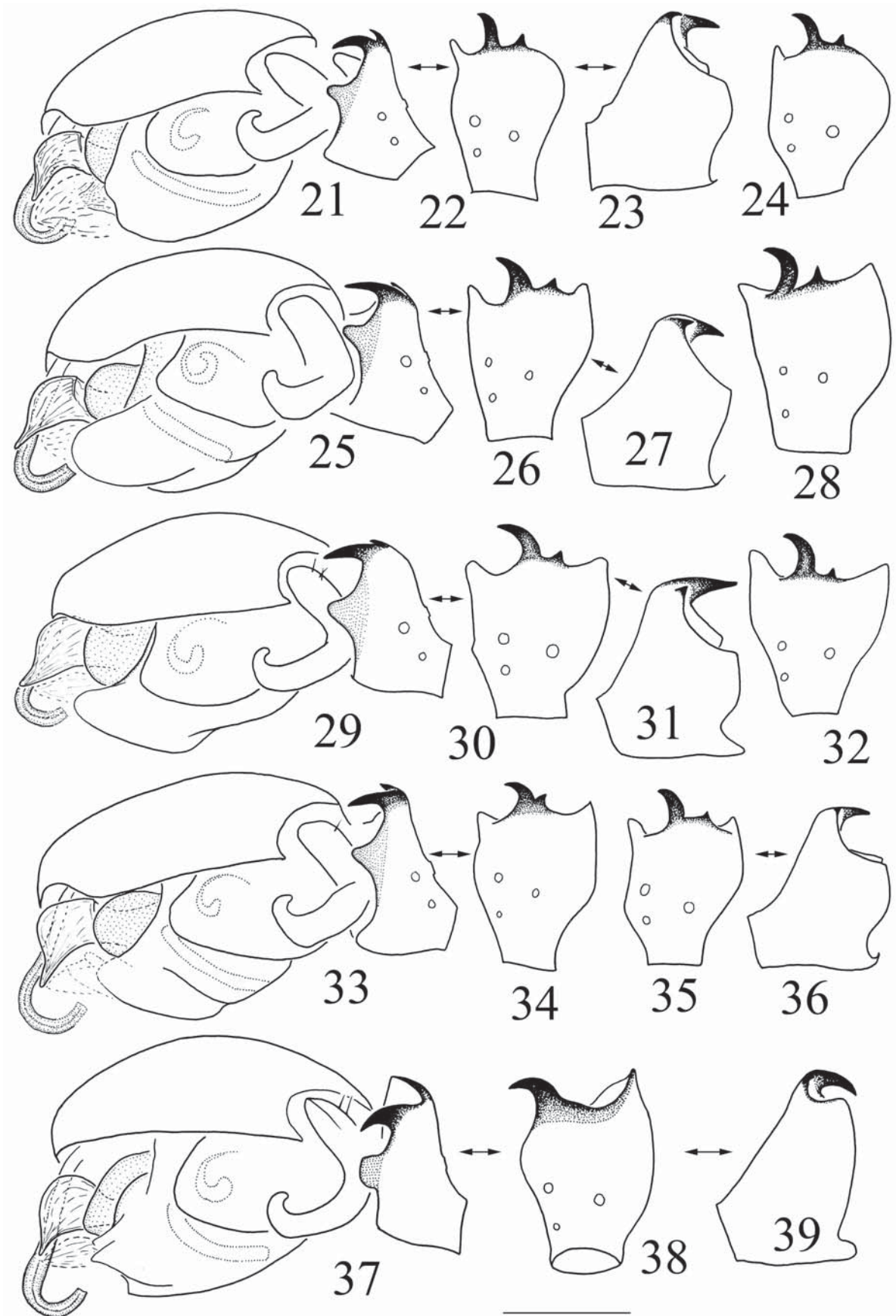
2009b *Trichoncoides* cf. *piscator* — Piterkina: 339.

2009 *Trichoncoides* cf. *piscator* — Piterkina, Mikhailov: 66.

2011 *Trichoncoides* cf. *piscator* — Piterkina: 100, 102.

MATERIAL: Holotype 1 ♂ (ZMMU), KAZAKHSTAN, West Kazakhstan Area, environs of Dzhanybek (= Zhanibek), Dzhanybek Research Station (49°23'52.87"N 46°47'46.31"E), semi-desert, desert association with *Kochia prostrata* and *Artemisia pauciflora* (49°23'39.88"N 46°47'50.04"E), sweeping, 6.V.2004, leg. T. Piterkina.

Paratypes: 1 ♂ (ZMMU), KAZAKHSTAN, West Kazakhstan Area, environs of Dzhanybek (= Zhanibek), Dzhanybek Research Station (49°23'52.87"N 46°47'46.31"E), semi-desert, desert association with *Kochia prostrata* and *Artemisia pauciflora* (49°23'39.88"N 46°47'50.04"E), pitfall traps, 10–15.V.2004, leg. T. Piterkina; 1 ♀ (ZMMU), same locality, pitfall traps, 30.IV–5.V.2005, leg. T. Piterkina; 1 ♂ (ZMMU), same locality, sweeping, 13.VII.2004, leg. T. Piterkina; 1 ♀ (ZMMU), same locality, pitfall traps, 5–10.V.2005, leg. T. Piterkina; 1 ♀ (ZMMU), same locality, steppe association with diverse herbs, sweeping, 23.IV.2004, leg. T. Piterkina; 1 ♀ (MHNG), same locality, sweeping, 3.VII.2004, leg. T.



Piterkina; 1 ♂ (MHNG), same locality, sweeping, 12.VII.2004, leg. T. Piterkina; 1 ♂ (ZMMU), RUSSIA, Volgograd Area, environs of Lake Elton, slope of floodplain terraces on right bank of Khara River, 4 km upstream of river mouth (49°12'54.60"N 46°40'1.80"E), semi-desert, grass-forb steppe association, pitfall traps, 10–20.IV.2007, leg. K. Makarov & A. Matalin; 1 ♂ (ZMMU), ca 45 km NW of Elton Village, upper reaches of Khara River (49°21'58.86"N 46°21'47.40"E), semi-desert, steppe association with *Festuca valesiaca* and *Agropyron desertorum*, pitfall traps, 25.IV–5.V.2011, leg. O. Bukhareva & A. Bykov.

COMPARATIVE MATERIAL EXAMINED: *Trichoncoides piscator* (Simon, 1884): 1 ♀ (MHNG), KAZAKHSTAN, West Kazakhstan Area, environs of Dzhanlybek (= Zhanibek), Dzhanlybek Research Station, semi-desert, shelter-belt with *Quercus robur* (49°23'25.19"N 46°47'37.03"E), pitfall traps, 20–25.V.2005, leg. T. Piterkina; 1 ♂ (MHNG), same locality, desert association with *Kochia prostrata* and *Artemisia pauciflora*, sweeping, 18.V.2004, leg. T. Piterkina; 1 ♂ (ZMMU), same locality, steppe association with diverse herbs, sweeping, 23.IX.2004, leg. T. Piterkina; 1 ♀ (ZMMU), same locality, pitfall traps, 25–30.IX.2004; 2 ♀♀ (ZMMU), East Kazakhstan Area, Buchtarminka Reservoir, 10 km S of Slavyanka, 8.V.1998, leg. R. Dudko; 3 ♂♂ (ZMMU), RUSSIA, Volgograd Area, environs of Lake Elton, 3 km upstream of Khara River mouth, floodplain terrace on right river bank (49°12'N 46°40'E), salina with *Salicornia prostrata*, pitfall traps, 2–11.IV.2007, leg. K. Makarov & A. Matalin; 4 ♂♂, 1 ♀ (ZMMU), same locality, pitfall traps, 10–20.IV.2007, leg. K. Makarov & A. Matalin; 1 ♂ (ZMMU), Lake Elton, salt-marsh on bed-rock coast near Khara River mouth (49°10'3.00"N 46°51'39.00"E), pitfall traps, 10–20.IV.2007, leg. K. Makarov & A. Matalin; 4 ♂♂, 1 ♀ (ZMMU), ISRAEL, 10 km SSW of Beit-Shemesh, Adullam Nature Reserve, 300–400 m, pitfall traps, 10.III.2008, leg. O. Skutetsky; 3 ♂♂, 3 ♀♀ (ZMMU), IRAN, Tehran, Firuz Kun (35°45'N, 52°46'E), 23.VII.1973, leg. A. Senglet; 1 ♀ (ZMMU), AZERBAIJAN, Baku (=Baki), 9.VI.1985, leg. P. Dunin; 1 ♂ (ZMMU), Azerbaijan, Caucasus, Saatli Distr., Djafarkhan, 0 m a.s.l., 24.VIII.1982, leg. P. Dunin; 1 ♀ (ZMMU), Zakatala (= Zaqatala), floodplain of Talachai River, 550–560 m a.s.l., 7.VI.1986, leg. K. Mikhailov; 1 ♀ (ZMMU), Shamakhi (= Şamaxı) Distr., Pirkuli (= Pırqulu), 1200–1300 m a.s.l., sweeping, 26.V.1984, leg. D. Logunov; 2 ♂♂ (ZMMU), TURKMENISTAN, Kopetdagh Mts., bank of Sumbar (= Sari-su) River, 8–13.V.1983, leg. S. Zabelin.

DIAGNOSIS: The new species is similar to *T. piscator* (Simon, 1884), but differs well by the absence of a small retrolateral outgrowth on the palpal tibia, by a peculiar modification of the apicodorsal tibial teeth-shaped apophyses, by a narrower and more protruded anterior radical process in male. The female is particular in a darkened wedge-shaped stem of the median plate and in spherical receptacles surrounded by the seminal ducts.

NAME: The new species honours Professor Bella R. Striganova, a renowned scientist, one of the leaders in soil zoology and ecology in Russia.

DESCRIPTION: Male (holotype). Total length, 1.38. Carapace pale brown, unmodified, with an indistinct, grey, polygonal, median spot and a narrow dark margin, 0.70 (0.63–0.70 in paratypes) long, 0.53 wide.

Carapace bearing one long spine (some paratypes with two ones attached between posterior median eyes, directed backwards and bent down to carapace surface (as shown in Figs 1 & 2). Chelicerae, 0.23 long, unmodified, stridulatory furrows distinct. Legs brownish yellow. Leg I, 1.89 long (0.53 + 0.20 + 0.45 + 0.40 + 0.31), IV, 1.98 long (0.55 + 0.18 + 0.50 + 0.45 + 0.30). Chaetotaxy: 2.2.1.1, spines weak, their length about 1–1.5 diameter of segment. TmI, 0.46 (0.43–0.46 in paratypes). Metatarsus IV without trichobothrium. Palp (as shown in Figs 3–20): Palpal tibia apicodorsally with two claw-shaped teeth situated on same base; lateral edges evenly convex, without outgrowth (shown in Fig. 3). Paracymbium simple, L-shaped. Frontal part of tegulum membranous, poorly visible. Distal suprategular apophysis hypertrophied: very wide, expanded, transparent partly, as a thin tissue enveloping radical part of embolic division. Anterior radical process relatively long and narrow, tapering smoothly to a sharp tip. Embolus long and curved, distal part describing semicircle. Abdomen 0.75 long, 0.50 wide, grey.

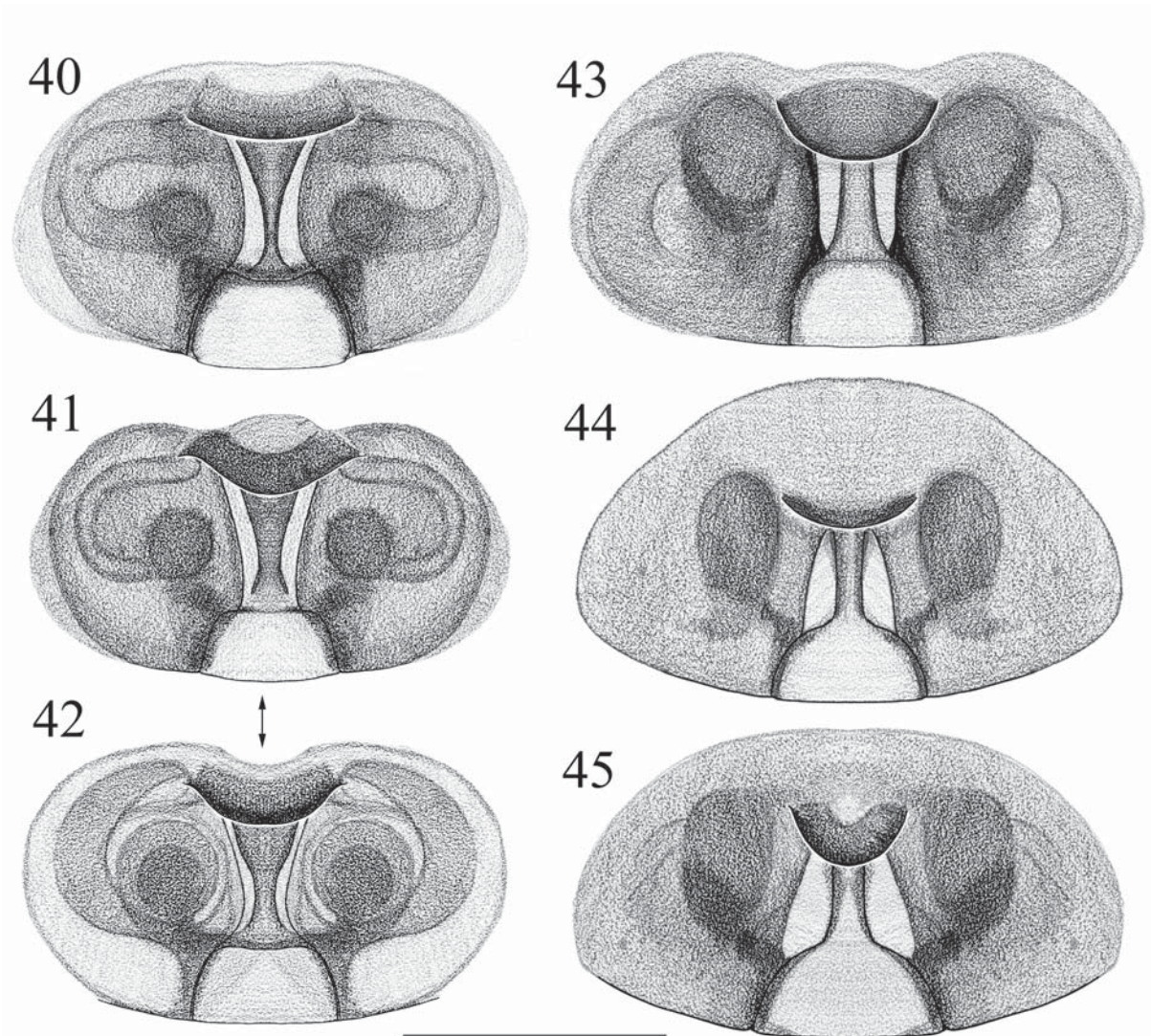
Female. Total length 1.75. Carapace 0.83 (0.65–0.83) long, 0.55 wide, similar in shape to male, but without special spines in head area. Chelicerae 0.35 long. Leg I, 1.99 long (0.55 + 0.20 + 0.48 + 0.43 + 0.33), IV, 2.04 long (0.60 + 0.18 + 0.53 + 0.45 + 0.28). TmI 0.41 (0.41–0.44). Abdomen 1.15 long, 0.70 wide. Epigyne (as shown in Figs 40–42): Base of median plate covered with a black, small, rounded visor. Stem of median plate brown to black, wedge-shaped: narrowed down until or almost until expanded part of median plate. Receptacles spherical, seminal ducts in its middle and distal parts much wider than their proximal parts, fully surrounded by seminal ducts. Body and leg coloration, as well as chaetotaxy, as in male.

VARIABILITY: Variation in size as shown above in Description. Carapace shape in males stable, maximum two long peculiar spines on male head; if absent or one, then most likely broken off. Shape of epigyne, male palpal tibia, distal suprategular apophysis and anterior radical process more or less stable, with only minor variations. Carapace coloration from yellow to brown in both sexes, abdomen from grey to white.

TAXONOMIC REMARKS: *T. striganovae* sp.n. is very similar to *T. piscator*, but differs well by the absence of a small retrolateral outgrowth on the palpal tibia (Figs 3, 8, 12, 17 cf. Figs 21, 25, 29, 33, 37), by the shape of apicodorsal, tibial, tooth-like apophyses situated on the same base (Figs 8–20 cf. Figs 21–39). The anterior radical process is narrower and longer

Figs 21–39. Details of palp structure of *Trichoncoides piscator* (Simon, 1884). 21, 25, 29, 33, 37 — left palp, retrolateral view; 22–24, 26–28, 30–32, 34–36, 38, 39 — palpal tibia; 22, 24, 26, 28, 30, 32, 34, 35, 38 — dorsal view; 23, 27, 31, 36, 39 — prolateral view; 21–23 — specimen from Dzhanlybek, Kazakhstan; 24 — specimen from near Lake Elton, Russia; 25–28 — specimens from Firuz Kun, Iran; 29–32 — specimens from Djafarkhan, Azerbaijan; 33–36 — specimens from Sumbar, Turkmenistan; 37–39 — specimens from Adullam Nature Reserve, Israel. Arrows indicate which details belong to the same specimen.

Рис. 21–39. Детали пальпы самца *Trichoncoides piscator* (Simon, 1884). 21, 25, 29, 33, 37 — левая пальпа, ретролатерально; 22–24, 26–28, 30–32, 34–36, 38, 39 — голень пальпы; 22, 24, 26, 28, 30, 32, 34, 35, 38 — вид сверху; 23, 27, 31, 36, 39 — пролатерально; 21–23 — экземпляр из Джаныбека, Казахстан; 24 — экземпляр с оз. Эльтон, Россия; 25–28 — экземпляры из Firuz Kun, Иран; 29–32 — экземпляры из Джафархана, Азербайджан; 33–36 — экземпляры из Сумбар, Туркменистан; 37–39 — экземпляры из заповедника Adullam, Израиль. Стрелки указывают на один и тот же экземпляр.



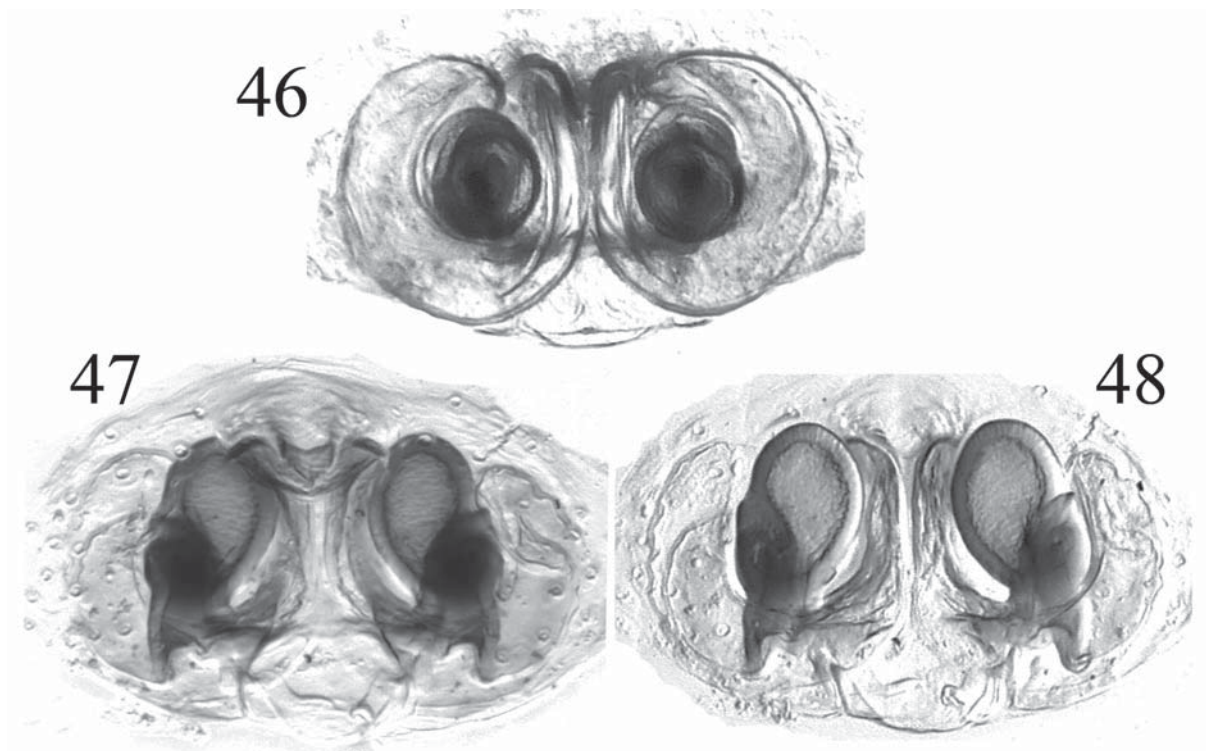
Figs 40–45. Epigynes of *Trichoncoides striganovae* sp.n., paratypes (40–42) & *T. piscator* (Simon, 1884) (43–45). 40–42, 44, 45 — specimens from Dzhanlybek, Kazakhstan; 43 — specimen from Adullam Nature Reserve, Israel; 42 — epigyne same as shown in Fig. 41, but slightly cleared with KOH. Arrows indicate which details belong to the same specimen.

Рис. 40–45. Эпигины *Trichoncoides striganovae* sp.n., паратипы (40–42) и *T. piscator* (Simon, 1884) (43–45). 40–42, 44, 45 — экземпляры из Джаныбека, Казахстан; 43 — экземпляр из заповедника Adullam, Израиль; 42 — эпигина та же, что и на Рис. 41, но слегка просветлённая едким кали. Стрелки указывают на один и тот же экземпляр.

(Fig. 3 cf. Figs 21, 25, 29, 33, 37). The female can easily be distinguished by a darkened wedge-shaped stem of the median plate, by partly transparent, nearly loop-shaped seminal ducts on both sides of the median plate, as well as by spherical receptacles fully surrounded by the seminal ducts (Figs 40–42, 46 cf. Figs 43–45, 47, 48). The illustrations of the epigyne provided by Denis [1950: 15; 1966: 2] for *T. pilosus* Denis, 1950, the second congener known only from the female, are insufficiently clear to compare to that of *T. striganovae* sp.n., but both species can easily be separated by the shape of the carapace: regularly convex in *T. pilosus* versus complex in profile and similar to that of the male in *T. striganovae* sp.n. (as shown in Figs 1,

2). The epigyne of *T. striganovae* sp.n. resembles that illustrated by Miller [1966, fig. 4] for *Paratrichoncus vej dovskyi* (Miller, 1939) [= *Trichoncoides piscator* sensu Georgescu, 1970] from Brno, Czech Republic, notably the shape of the stem of the epigynal median plate, yet the figure of the vulva [Miller, 1966, fig. 5] really shows differences from *T. striganovae* sp.n.

NATURAL HISTORY: The species seems to be quite rare. Only ten specimens (6 ♂♂, 4 ♀♀) have been obtained over 5 years of sampling. Females occur in April–May, males from April till July. Inhabits steppe and desert associations. In both of these habitats, *T. striganovae* sp.n. occurs together with the very similar species, *T. piscator*.



Figs 46–48. Vulvae of *Trichoncoides striganovae* sp.n., paratype from Dzhanybek, Kazakhstan (46) & *T. piscator* (Simon, 1884), specimen from Adullam Nature Reserve, Israel (47, 48). 46, 48 — dorsal view; 47 — ventral view.

Рис. 46–48. Эндогины *Trichoncoides striganovae* sp.n., паратип из Джаныбека, Казахстан (46) и *T. piscator* (Simon, 1884), экземпляр из заповедника Adullam, Израиль (47, 48). 46, 48 — вид сверху; 47 — вид снизу.

**DISTRIBUTION:** Currently known from a small area in the southeastern part of the Russian Plain, Russia and Western Kazakhstan.

**NOTE:** The genus *Trichoncoides* Denis, 1950 was established for *T. pilosus*, based on a single female from Camargue, France [Denis, 1950]. Because the holotype was poorly depicted, while a conspecific male remains unknown, we can hardly be sure that both *T. piscator* and *T. striganovae* sp.n. are actually congeneric with *T. pilosus*, the type species.

Throughout its Ancient Mediterranean distribution, *T. piscator* shows considerable variability, mostly in size, position and arrangement of the apicodorsal tooth-like apophyses on the male palpal tibia (see Figs 21–39). However, the other genital structures such as distal supratergular apophysis, embolus, anterior radical process, as well as the arrangement and shape of the receptacles and seminal ducts seem to be rather stable. Thus, European, North African and Levantine representatives of the genus have two widely separated tooth-like apophyses, the prolateral one often being absent (see Fig. 38 & Bosmans, 2007, fig. 160). In contrast, specimens from the eastern part of the range show these apophyses more strongly drawn together, even up to being in contact at their bases (see Fig. 34). Currently no-one can be sure if we face variability in male palpal structure within a single species, or

else *T. piscator* is a composite taxon to be split in the future.

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## References

- Bosmans R. 2007. Contribution to the knowledge of the Linyphiidae of the Maghreb. Part XII. Miscellaneous erigonine genera and additional records (Araneae: Linyphiidae: Erigoninae) // Bull. Anns Soc. r. belge Ent. T.143. P.117–163.

- Denis J. 1950. Araignées de France. III. Araignées de Camargue // Revue fr. Ent. T.17. P.62–78.
- Denis J. 1966. Notes sur les érigonides (Araignées). XXXIV. Le genre *Trichoncoides* Denis // Bull. Mus. natn. Hist. nat. Paris. T.38. P.233–237.
- Georgescu M. 1970. Données systématiques sur le genre *Trichoncoides* Denis (Araneae, Micryphantidae) // Reichenbachia. Bd.13. S.211–218.
- Gnelitsa V.A. 2008. *Pelecopsis steppensis* sp.n. (Aranei: Linyphiidae) from southern Ukraine // Arthropoda Selecta. Vol.16. No.2. P.137–141.
- Gnelitsa V.A., Ponomarev A.V. 2010. A new *Centromerus* Dahl, 1886 (Aranei: Linyphiidae: Micronetinae) from south of the Russian plain // Arthropoda Selecta. Vol.19. No.4. P.265–268.
- Milkov F.N., Gvozdetsky N.A. 1986. [Physiography of the USSR]. Moskva: Vysshaya shkola Publ. 512 p. [in Russian].
- Miller F. 1966. Einige neue oder unvollkommen bekannte Zwergspinnen (Micryphantidae) aus der Tschechoslowakei (Araneidea) // Acta ent. bohemoslavaca. Bd.63. S.149–164.
- Piterkina T.V. 2009a. Spiders (Arachnida, Araneae) of the Dzhanbybek Research Station, West Kazakhstan: a local fauna in a biogeographical aspect // Golovatch S.I., Makarova O.L., Babenko A.B. & Penev L.D. (eds). Species and communities in extreme environments Sofia & Moscow: Pensoft Publishers & KMK Scientific Press. P.335–356.
- Piterkina T.V. 2009b. [Spiders (Arachnida, Araneae) of the Dzhanbybek Research Station, West Kazakhstan: a local fauna in a biogeographical aspect] // Babenko A.B., Matveyeva N.V., Makarova O.L. & Golovatch S.I. (eds). Vidy i soobshchestva v ekstremal'nykh usloviyakh. Moscow & Sofia: KMK Scientific Press & Pensoft Publishers. P.335–352 [in Russian].
- Piterkina T.V. 2011. Spatial and temporal structure of the spider community in the clay semi-desert of western Kazakhstan // Arachnologische Mitteilungen. Bd.40. S.94–104.
- Piterkina T.V., Mikhailov K.G. 2009. [Annotated check-list of spiders (Aranei) of Dzhanbybek Station] // Tishkov A.A. (ed.). Zhivotnyie glinistoi polupustyni Zavolzhyia (konspekty faun i ekologicheskiye kharakteristiki) Moscow: KMK Scientific Press. P.62–88 [in Russian].
- Rode A.A. 1971. [Natural conditions and experimental plantations of the Dzhanbybek Station] // Rode A.A. (ed.). Zhivotnyie iskusstvennikh lesnykh nasazhdenii v glinistoi polupustyne. Nauka, Moscow. P.5–12 [in Russian].
- Tanasevitch A.V., Piterkina T.V. 2007. Four new species of the spider family Linyphiidae (Aranei) from clay semi-desert of Western Kazakhstan // Arthropoda Selecta. Vol.16. No.1. P.23–28.
- Tanasevitch A.V. 1986. New and little-known species of *Lepthyphantes* Menge 1866 from the Soviet Union (Arachnida: Araneae: Linyphiidae) // Senckenbergiana Biol. Bd.67. H.1/3. S.137–172.
- Tanasevitch A.V. 1987. A new genus of spiders of the subfamily Erigoninae (Aranei, Linyphiidae) from Western Kazakhstan // Biol. Nauki. No.11. P.72–75 [in Russian, with English summary].
- Tanasevitch A.V. 1993. A new species of *Trachelocamptus* Simon from Western Kazakhstan (Arachnida: Araneae: Linyphiidae: Micronetinae) // Reichenbachia. Bd.30. Nr.2. S.5–6.
- 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.