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## *Tetragnatha reimoseri* (Roşca, 1939) (Aranei: Tetragnathidae) in the Ural and some territories of North Eurasia

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Perm State University, Bukirev Street, 15, Perm 614600 Russia. E-mail: efimik.viktor@mail.ru

**Abstract.** *Tetragnatha reimoseri* (Roşca, 1939) is recorded for the Ural and some territories of North Eurasia for the first time, instead of erroneous indications as *T. isidis* (Simon, 1880). Detailed redescription of *T. reimoseri* is given. Four species of *Tetragnatha* Latreille, 1804 (*T. isidis*, *T. reimoseri*, *T. conica* (Grube, 1861) and *T. caudicula* (Karsch, 1879)) with a specific tail-shaped apex of abdomen are known from North Eurasia. Due to a structure of male palps and chelicerae and female sexual organs, *T. reimoseri* is closer to *T. caudicula* than to *T. isidis*. An identification key to four mentioned species is provided.

**Key words:** spiders, Tetragnathidae, *Tetragnatha*, taxonomy, identification key, Ural, North Eurasia.

### *Tetragnatha reimoseri* (Roşca, 1939) (Aranei: Tetragnathidae) на Урале и некоторых территориях Северной Евразии

© В.Е. Ефимик, А.В. Тиунов

Пермский государственный национальный исследовательский университет, ул. Букирева, 15, Пермь 614600 Россия. E-mail: efimik.viktor@mail.ru

**Резюме.** Впервые для Урала и некоторых территорий Северной Евразии отмечен *Tetragnatha reimoseri* (Roşca, 1939) – вид пауков-тетрагнатид, который ошибочно указывался как *T. isidis* (Simon, 1880). Дано подробное иллюстрированное переписание *T. reimoseri*. Из Северной Евразии известно четыре вида пауков-тетрагнат (*T. isidis*, *T. reimoseri*, *T. conica* (Grube, 1861), *T. caudicula* (Karsch, 1879)) со специфическим хвостовидным концом брюшка, вытянутым за паутинными бородавками. Строением пальп самцов, хелицер обоих полов и половых органов самок *T. reimoseri* ближе к *T. caudicula*, чем к *T. isidis*. Для рассматриваемых видов представлена определительная таблица.

**Ключевые слова:** пауки, Tetragnathidae, *Tetragnatha*, таксономия, определительная таблица, Урал, Северная Евразия.

## Introduction

*Tetragnatha* Latreille, 1804 is the largest genus of the family Tetragnathidae, currently comprising 318 species and subspecies in the world fauna [World Spider Catalog, 2025]. Among North Eurasian spiders of this genus, only representatives of four species have tail-like elongated opisthosoma, reaching beyond spinnerets – *T. conica* (Grube, 1861), *T. caudicula* (Karsch, 1879), *T. isidis* (Simon, 1880) and *T. reimoseri* (Roşca, 1939).

First records of tetragnathids with tail-like elongated opisthosoma from the Southern Trans-Ural were made by Azheganova [1951, 1968] under the name *Eucta lutescens* Lendl, 1886. Then *T. isidis* was listed in subsequent publications on the Southern Trans-Ural [Esyunin, Pakhorukov, 1992; Esyunin, Efimik, 1996] and the Southern Ural [Esyunin, 2010; Sokolova et al., 2023]. A thorough revision of specimens has shown that records from the Southern Ural and Southern Trans-Ural as well as from the Caucasus and Eastern Kazakhstan belong to *T. reimoseri*.

Both *T. reimoseri* and *T. isidis* were reported from different regions of Russia and adjacent territories, but unfortunately it is currently not possible to verify these records and materials. The aim of the present work is to correct erroneous information about the distribution of *T. isidis* and *T. reimoseri* in the Ural and some territories of North Eurasia, based on the available materials.

## Material and methods

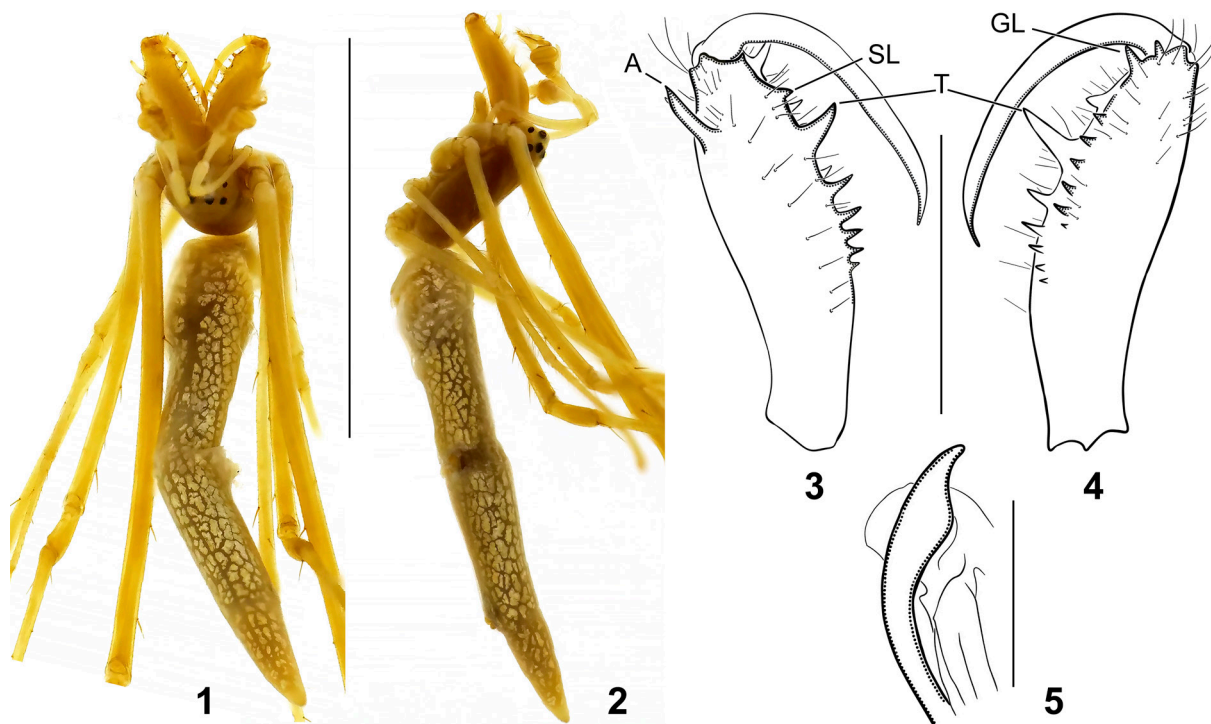
All specimens are fixed in 70% ethanol and deposited in the collection of Department of Invertebrate Zoology and Aquatic Ecology of the Perm State University (PSU, Perm, Russia, curator S.L. Esyunin). The measurements are given in millimeters. Lengths of leg segments are measured from their dorsal side. Leg measurements are given in the following order: total length (femur, patella + tibia, metatarsus, tarsus).

Abbreviations used in the text and figures:

Eyes: ALE – anterior lateral eye; AME – anterior median eye; PLE – posterior lateral eye; PME – posterior median eye; AER – anterior eye row; PER – posterior eye row; AME–ALE – distance between AME and ALE; AME–AME – distance between AME; PME–PLE – distance between PME and PLE; PME–PME – distance between PME; MO – median ocular quadrangle.

Palps and epigyne: C – conductor; E – embolus; P – paracymbium; AS – anterior spermathecae; PS – posterior spermathecae; CD – copulatory duct; ST – spermatheca.

Chelicera: AXU – auxiliary guide tooth of the upper row of chelicera, above GU; AXL – auxiliary guide tooth of the lower row of chelicera; A – male dorsal apophysis, used to lock females fang during copulation; GU – guide tooth of the upper row of chelicera; GL – guide tooth of the lower row of chelicera; RSU – the upper row of small



Figs 1–5. *Tetragnatha reimoseri*, male.

1–2 – habitus: 1 – dorsal view, 2 – lateral view; 3–4 – chelicera: 3 – dorsal view, 4 – ventral view; 5 – tip of embolus. A – dorsal apophysis; SL – a tooth which usually slopes towards the base of the segment; T – elongated tooth in the upper row of chelicera; GL – guide tooth of the lower row of chelicera. Scale bars: 1–2 – 5 mm, 3–4 – 1 mm, 5 – 0.1 mm.

Рис. 1–5. *Tetragnatha reimoseri*, самец.

1–2 – габитус: 1 – вид сверху, 2 – вид сбоку; 3–4 – хелицера: 3 – вид сверху, 4 – вид снизу; 5 – вершина эмболюса. А – спинной отросток хелицеры; SL – зуб, который обычно наклонен к основанию хелицеры; Т – удлиненный зуб в верхнем ряду хелицеры; GL – направляющий зуб нижнего ряда хелицер. Масштабные линейки: 1–2 – 5 мм, 3–4 – 1 мм, 5 – 0.1 мм.

teeth; RSL – the lower row of small teeth; SL – a tooth which usually slopes towards the base of the segment in the male of some species; T – elongated tooth in the upper row of male chelicera; t – a tooth or prominence, isolated from the dentition; U2 – a tooth on the upper row of chelicera after GU; L2 – a tooth on the lower row of chelicera after GL. This terminology follows Wiehle [1939], Locket and Millidge [1953], and Okuma [1987].

Digital photographs are taken with Panasonic GH5 digital camera with a Panasonic Lumix H-H025 25 mm f/1.7 lens. Stacks of colour images were processed using CombineZM software. Images of genitalia were taken from Zeiss Imager.A2 microscope. SEM micrographs were made by means of Hitachi TM3000 SEM microscope in BSE (back-scattered electrons) mode at the Perm State University.

*Tetragnatha reimoseri* (Roşca, 1939)  
(Figs 1–18)

*Eucta lutescens*: Azheganova, 1968: 91, figs 203a–6, 204, 215, 216a–6, 217a–b (♂♀).

*Eucta isidis*: Mkhaidze, 1997: 286, figs 654–658.

**Material.** Russia. 1♀ (PSU-900), Chelyabinsk Region, Troitsk District, Shartash Lake, from coastal vegetation, 29.06.1969 (unknown collector); 1♀ (PSU-900), the same locality, 27.06.1995 (V.E. Efimik); 1♀ (PSU-1198) the same locality, steppe, 07.2000 (S.L. Eshunin); 1♂ (PSU-1198) the same locality, from coastal vegetation, 17.07.2008 (A.A. Parkhomenko); 1♂ (PSU-5950), Chelyabinsk Region, Ilmensky Reserve, river bank, 28.06.2009 (A.A. Parkhomenko).

Kazakhstan. 1♀ (PSU-2395), East Kazakhstan Region, Kaldzhar River, near Burana vill., from coastal vegetation, 18.07.1936 (D.E. Kharitonov); 2♀ (PSU-2395), the same locality, meadow, 18.07.1936 (A.G. Ovsyannikov).

Georgia. 1♂ (PSU-80), Poti, 19.08.1939 (T.S. Mkhaidze); 1♀, 1♀ immature (PSU-80), the same locality, 1940 (T.S. Mkhaidze).

**Redescription.** Male (Figs 1–6, 8–11). Total length 11.27–12.01. Carapace 3.35–4.22 long, 1.57–1.64 wide, pale yellow. Eye sizes and interdistance: AME 0.12, ALE 0.1, PME 0.13, PLE 0.13; AME–AME 0.09, AME–ALE 0.14, PME–PME 0.18, PME–PLE 0.09. MO anterior width 0.07, posterior width 0.19, length 0.11. Clypeus 0.29–0.39 high. Labium pale yellow. Sternum from pale yellow to light brown. Legs pale yellow. Leg measurements: I, 27.29–34.46 (7.36–9.57, 9.29–11.64, 8.71–11.21, 1.93–2.04); II, 16.86–20.78 (5.57–6.56, 5.07–7.07, 4.93–5.79, 1.29–1.36); III, 6.72–8.72 (2.43–3.29, 1.85–2.57, 1.71–2.29); IV 16.64–21.13 (5.64–7.43, 5.64–6.63, 4.35–6.21, 1.01–0.86). Chelicera: dorsal apophysis (A) elongated, forked at the end; AXU present, GU absent; upper row with 7 teeth: SL with a beveled tip pointing towards T; T largest; other teeth decreasing in size gradually. AXL present; lower row with 7 teeth: GL largest, other teeth small. Abdomen 7.79–7.92 long, 0.93–1.36 wide, shiny silvery dorsal and gray ventral. Palp (Figs 5, 8, 11). Paracymbium with blunt tip. Tegulum oval, ~2 times wider than long. Conductor with 2 sharply protruding folds. Embolus completely enveloped by conductor; distal portion is curved with sharply narrowed (claw-shaped) tip.

**Female** (Figs 7, 12–18). Total length 16.42–26.28. Carapace 3.43–4.14 long, 2.07–2.71 wide, pale yellow. Eye sizes and interdistance: AME 1.43, ALE 1.01, PME 1.57, PLE 1.29; AME–AME 1.43, AME–ALE 3.14, PME–PME 1.71, PME–PLE 2.01. MO anterior width 0.21, posterior width 0.29, length 0.21. Clypeus 0.14–0.23 high. Labium pale yellow. Sternum from pale yellow



Figs 6–11. Scanning electron micrographs of *Tetragnatha reimoseri*.

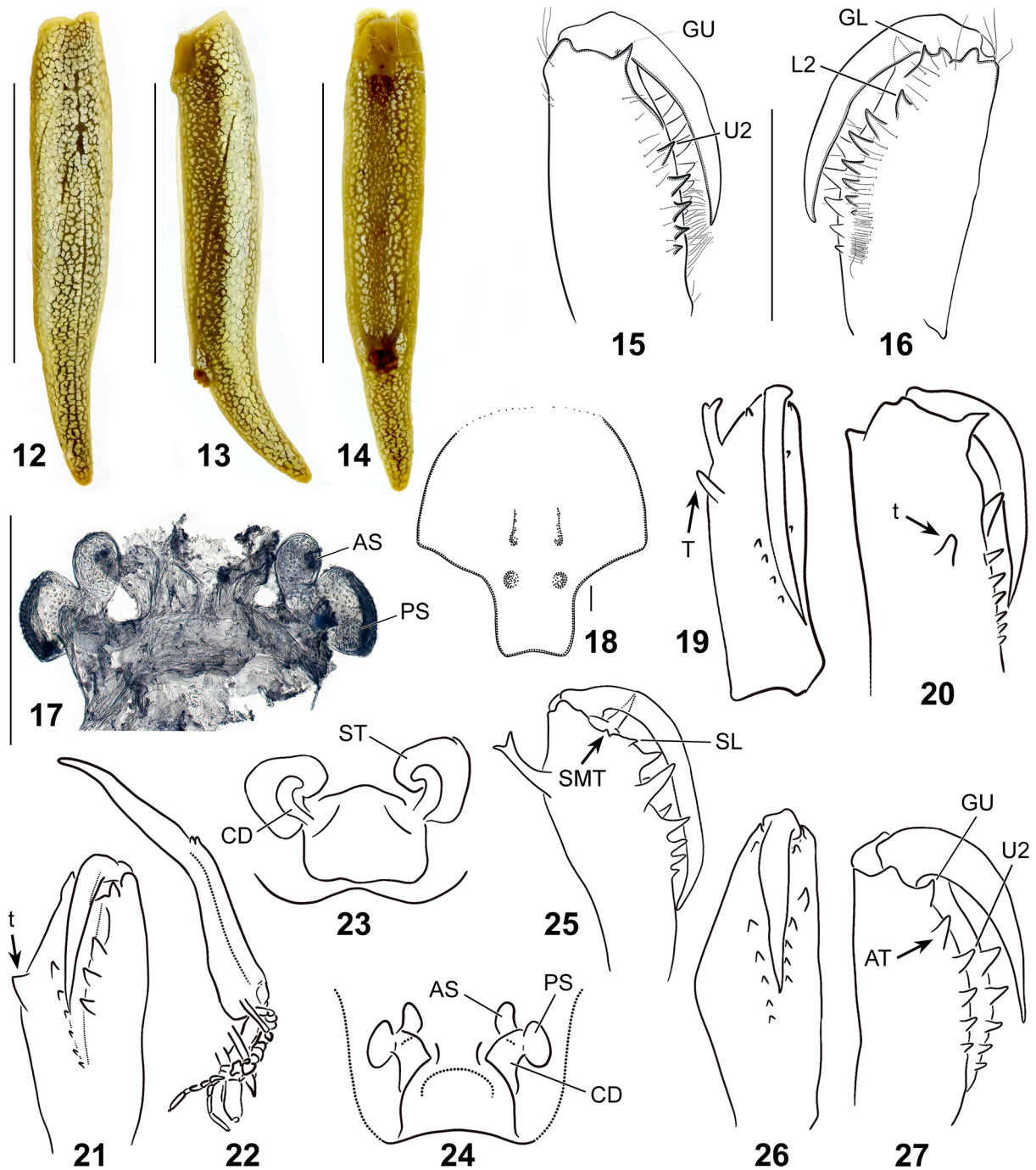
6 – male chelicera, dorsally; 7 – female chelicera, ventrally; 8 – male palp; 9 – dorsal apophysis of male chelicera (A); 10 – distal part of male chelicera, dorsally; 11 – tip of palp. A – male dorsal apophysis; AXU – auxiliary guide tooth of the upper row of chelicera; C – conductor; E – embolus; P – paracymbium; SL – a tooth tilted towards the base of the segment; T – elongated tooth in the upper row of male chelicera; GL – guide tooth of the lower row of chelicera; L2 – a tooth on the lower row of chelicera after GL. Scale bars: 6–7 – 1 mm, 8, 10 – 0.5 mm, 9 – 0.3 mm, 11 – 0.2 mm.

Рис. 6–11. Сканирующие электронные фотографии *Tetragnatha reimoseri* (Rosca, 1939).

6 – хелицера самца, сверху; 7 – хелицера самки, снизу; 8 – пальца самца; 9 – дорсальный отросток хелицеры самца (A); 10 – кончик хелицеры самца, сверху; 11 – верхушка пальца. A – дорсальный отросток хелицеры самца; AXU – вспомогательный направляющий зуб верхнего ряда хелицер; C – кондуктор; E – эмболюс; P – парацимбиум; SL – зуб, наклоненный к основанию хелицеры; T – удлиненный зуб в верхнем ряду зубов хелицеры самца; GL – направляющий зуб нижнего ряда хелицеры; L2 – зуб в нижнем ряду хелицеры, следующий за GL. Масштабные линейки: 6–7 – 1 мм, 8, 10 – 0.5 мм, 9 – 0.3 мм, 11 – 0.2 мм.

to light brown, sometimes with medium longitudinal pale yellow spot. Legs pale yellow. Leg measurements: I, 22.28–30.29 (6.43–8.86, 7.28–10.29, 7.14–9.28, 1.43–1.86); II, 13.86–17.85 (4.57–5.86, 4.05–5.86, 4.29–4.85, 1.01–1.28); III, 6.78–8.85 (2.43–3.29, 1.85–2.57, 1.71–2.29); IV, 13.43–18.29 (4.71–6.85, 3.98–5.71, 3.86–5.28, 0.86–1.14). Chelicera: AXU absent; upper row with 7 teeth: GU small; U2 smaller than U3 and U4; other teeth decreasing in size gradually. AXL absent; lower row with

6 teeth: GL largest, L2 smaller than L3; other teeth decreasing in size gradually. Abdomen 11.86–22.14 long, 2.02–2.71 wide, shiny silvery dorsal and gray with rare shiny spots ventral. Epigyne (Figs 17, 18). The genital lobe is approximately as long as wide. Vulva composed of 2 pairs of spermathecae, diameter of posterior pair ~1.5 times of anterior pair, anterior pair spaced by 3.5 diameter of anterior spermatheca, posterior pair spaced by 4 diameters of posterior spermatheca. Central membranous sac absent.



Figs 12–27. *Tetragnatha reimoseri*, female, and diagnostic characters of some North Eurasian *Tetragnatha* species.

12–18 – *T. reimoseri*; 19–23 – *T. isidis*; 24–26 – *T. caudicula*; 27 – *T. conica*. 12–14 – abdomen: 12 – dorsal view, 13 – lateral view, 14 – ventral view; 15–16 – chelicera: 15 – dorsal view, 16 – ventral view; 17–18 – epigyne: 17 – dorsal view, 18 – ventral view; 19, 25 – male chelicera; 20–21, 26–27 – female chelicera; 22 – female body; 23–24 – vulva. 19–20 – by Lessert [1915]; 21–23 – by Morano [2020]; 24, 26 – by Zhu, Zhang [2011]; 25 – by Tanikawa [2009]; 27 – by Wesołowska [1988]. AS – anterior spermatheca; PS – posterior spermatheca; ST – spermatheca; CD – copulatory duct; GU – guide tooth of the upper row of chelicera; U2 – a tooth on the upper row of chelicera after GU; GL – guide tooth of the lower row of chelicera; L2 – a tooth on the lower row of chelicera after GL; T – elongated tooth in the upper row of male chelicera; t – a tooth or prominence, isolated from the dentition; SL – a tooth tilted towards the base of the segment; SMT – a small tooth near SL; AT – an additional tooth between GU and U2. Scale bars: 12–14 – 5 mm, 15–16 – 1 mm, 17 – 0.5 mm, 18 – 0.2 mm.

Рис. 12–27. *Tetragnatha reimoseri*, самка, и диагностические признаки некоторых видов рода *Tetragnatha* из Северной Евразии.

12–18 – *T. reimoseri*; 19–23 – *T. isidis*; 24–26 – *T. caudicula*; 27 – *T. conica*. 12–14 – брюшко: 12 – вид сверху, 13 – вид сбоку, 14 – вид снизу; 15–16 – хелицера: 15 – вид сверху, 16 – вид снизу; 17–18 – эпигина: 17 – вид сверху, 18 – вид снизу; 19, 25 – хелицера самца; 20–21, 26–27 – хелицера самки; 22 – общий вид самки; 23–24 – эндогина. 19–20 – по [Lessert, 1915]; 21–23 – по [Morano, 2020]; 24, 26 – по [Zhu, Zhang, 2011]; 25 – по [Tanikawa, 2009]; 27 – по [Wesołowska, 1988]. AS – передняя сперматека; PS – задняя сперматека; ST – сперматека; CD – копулятивный канал; GU – направляющий зуб верхнего ряда хелицеры; U2 – зуб в верхнем ряду хелицеры, следующий за GU; GL – направляющий зуб нижнего ряда хелицеры; L2 – зуб в нижнем ряду хелицеры, следующий за GL; T – удлиненный зуб в верхнем ряду зубов хелицеры самца; t – зуб или выступ, изолированный от зубного ряда; SL – зуб, наклоненный к основанию хелицеры; SMT – маленький зуб рядом с SL; AT – дополнительный зуб между GU и U2. Масштабные линейки: 12–14 – 5 мм, 15–16 – 1 мм, 17 – 0.5 мм, 18 – 0.2 мм.

**Diagnosis.** *Tetragnatha reimoseri* is close to *T. caudicula*, *T. conica* and *T. isidis*. All four species are found in North Eurasia and have an elongated opisthosoma, prominent beyond spinnerets. Unlike the first three species, *T. isidis* is distinguished by a longer posterior part of the abdomen after spinnerets [I]land, Helsdingen, 2011; Morano, 2020: fig. 70]. In the diagnosis below, we focused to the details in the structure of the chelicera and the copulatory organs.

Males of these species (the male of *T. conica* is unknown) are similar in having a bifurcated dorsal spur on the chelicera, but can be distinguished by the following characters: *T. reimoseri* differs from *T. isidis* by sharper conductor folds, by the absence SL and a different arrangement of the elongated tooth (T). The elongated tooth (T) is located in a row with other teeth in *T. reimoseri*, whereas it stands aside in *T. isidis* [Lessert, 1915: fig. 20]. *Tetragnatha reimoseri* differs from *T. caudicula* by the absence of a small tooth on the dorsal side of chelicerae, whereas *T. caudicula* has a small tooth near SL [Okuma, 1988: fig. 1A; Tanikawa, 2009: fig. 58].

Females of three species (*T. reimoseri*, *T. isidis*, *T. caudicula*) are similar in the shape of the epigynal fold and the absence of a central membranous sac in the vulva, but can be distinguished by the following characters: *T. reimoseri* differs from *T. isidis* by the absence of a tooth (t) isolated from the dentition on the dorsal side of the chelicerae [Lessert, 1915: fig. 21; Morano, 2020: fig. 72], by the presence of two pairs of spermathecae, whereas *T. isidis* possess only one pair [Morano, 2020: fig. 74]. *Tetragnatha reimoseri* differs from *T. caudicula* by the length of the copulatory ducts. In *T. reimoseri* copulatory ducts are equal to or shorter than the posterior spermatheca length (Fig. 17), whereas in *T. caudicula* copulatory ducts are at least 1.5 times longer than the posterior spermatheca length [Zhu, Zhang, 2011: fig. 118G]. Females of *T. reimoseri* differ from *T. conica* by the absence of a tooth between GU and U2 on the chelicera dorsally [Wesołowska, 1988: fig. 21].

**Misidentifications.** *Eucta lutescens* [Azheganova, 1951]; *Tetragnatha isidis* [Esyunin, Pakhorukov, 1992; Esyunin, Efimik, 1996; Esyunin, 2010; Sokolova et al., 2023].

**Notes.** We noticed that in the review of Tetragnathidae of the southern Far East [Kurenschikov, 1994], the figure of the male chelicera of *T. isidis* does not correspond to this species. At the same time, the shape and the number of teeth on the chelicerae [Kurenschikov, 1994: fig. 62] correspond to those in *Enoplognatha margarita* Yaginuma, 1964 from the family Theridiidae [Yaginuma, Zhu, 1992: fig. 15]. The latter species is widespread in the Russian Far East [Mikhailov, 2013; World Spider Catalog, 2025].

**Distribution.** France, Belgium, Netherlands, Germany, Poland, Italy, Austria, Hungary, Romania, Bulgaria, Georgia [Nentwig et al., 2025] including the Black Sea coast of the country, Russia (Southern Ural), eastern Kazakhstan.

Below we compiled an identification key to the North Eurasian *Tetragnatha* species having tail-like elongated abdomen, reaching beyond spinnerets.

### Key to North Asian species of *Tetragnatha* with elongated abdomen

(*T. conica* males are unknown to science)

1. Chelicerae of males (Fig. 19) and females (Figs 20, 21) with one isolated tooth on the dorsal side; vulva composed of one pair of spermathecae (Fig. 23); the posterior part of the abdomen after spinnerets is about the same length as the anterior part (Fig. 22) ..... *T. isidis*
- Chelicerae of males and females without an isolated tooth on the dorsal side (Figs 3, 15); vulva composed of two pairs of spermathecae or its structure is unknown (Figs 17, 24); the posterior part of the abdomen after spinnerets is much shorter than the front (Figs 12–14) ..... 2
2. Male ..... 3
- Female ..... 4
3. A small tooth near SL is presented (Fig. 25) ... *T. caudicula*
- A small tooth near SL is absent (Fig. 3) ..... *T. reimoseri*
4. A tooth between GU and U2 on the chelicera dorsally is presented (Fig. 27). Vulva unknown ..... *T. conica*
- A tooth between GU and U2 is absent (Figs 15, 26) ..... 5
5. The copulatory ducts of the vulva are equal to or shorter than the posterior spermatheca length (Fig. 17) ..... *T. reimoseri*
- The copulatory ducts are at least 1.5 times longer than the posterior spermatheca length (Fig. 24) ..... *T. caudicula*

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