

A new species of the genus *Silometopus* Simon, 1926 from the Caspian Lowland, Russia (Aranei: Linyphiidae)

Новый вид *Silometopus* Simon, 1926 из Прикаспийской низменности (Россия) (Aranei: Linyphiidae)

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KEY WORDS: taxonomy, spiders, Arachnida, Erigoninae, Russian Plain, arid fauna.

КЛЮЧЕВЫЕ СЛОВА: таксономия, пауки, Arachnida, Erigoninae, Русская равнина, аридная фауна.

ABSTRACT. A new erigonine species, *Silometopus elton* sp.n., is described from a semi-desert in the northwestern part of the Caspian Lowland. The species somewhat resembles the trans-Palaeartic *S. reussi* (Thorell, 1871), but can easily be distinguished by the structure of the distal suprategular apophysis and the shape of the palpal tibia. Based on its habitat preferences, *Silometopus elton* sp.n. can preliminary be characterized as an element of a semi-desert intrazonal fauna of the southeastern part of the Russian Plain.

How to cite this article: Tanasevitch A.V., Grushko T.V. 2020. A new species of the genus *Silometopus* Simon, 1926 from the Caspian Lowland, Russia (Aranei: Linyphiidae) // *Arthropoda Selecta*. Vol.29. No.4. P.495–498. doi: 10.15298/arthscl. 29.4.13

РЕЗЮМЕ. Новый вид паука подсемейства Erigoninae, *Silometopus elton* sp.n., описан из полупустыни северо-запада Прикаспийской низменности. Вид обнаруживает некоторое сходство с транспалеарктическим *S. reussi* (Thorell, 1871), но хорошо отличается от него строением дистальной супратегулярной апофизы и формой голени пальпы самца. Согласно биотопической приуроченности, новый вид может быть предварительно охарактеризован как элемент интразональной фауны полупустынь юга-востока Русской равнины.

Introduction

The Caspian Lowland is a vast arid territory that covers the southeastern part of the Russian Plain. Quite a lot of papers have been devoted to the linyphiid spiders of the Caspian Lowland, e.g. Piterkina [2009], Piterkina & Mikhailov [2009], Ponomarev *et al.* [2008],

Ponomarev & Dvadenko [2012], Ponomarev *et al.* [2018]; Tanasevitch [1987, 1993], Tanasevitch & Piterkina [2007], etc.

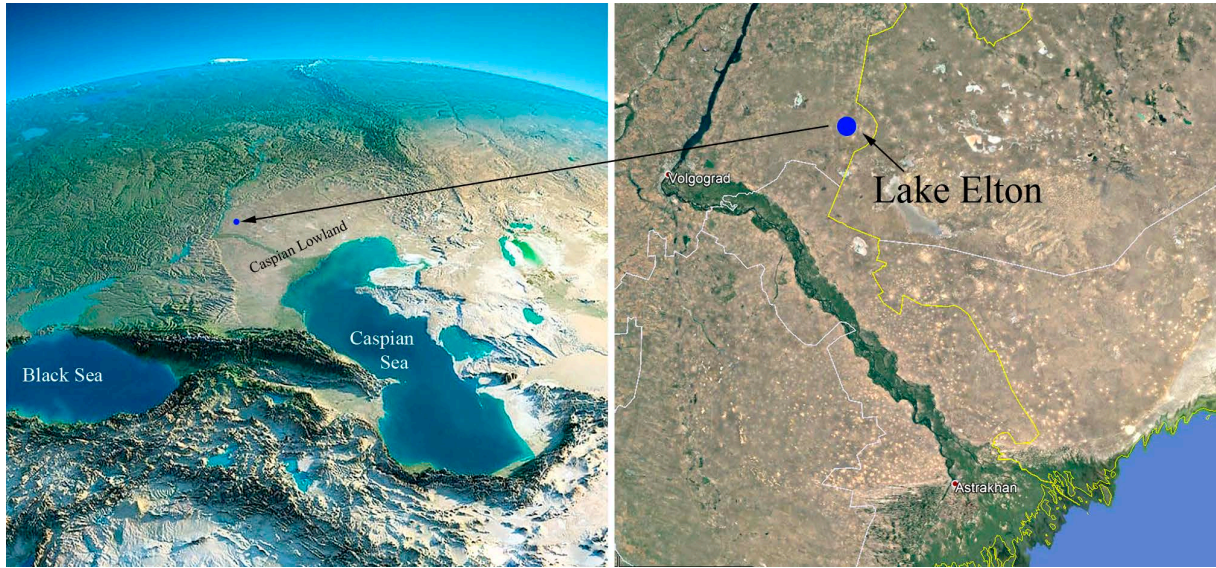
The genus *Silometopus* Simon, 1926 presently includes 17 species, most of which are restricted to Europe [World Spider Catalog, 2020]. One species, *S. incurvatus* (O. Pickard-Cambridge, 1873), has been recorded from the Caspian Lowland [Piterkina, 2009], and one more, *S. crassipedis* Tanasevitch et Piterkina, 2007, has been described from that territory [Tanasevitch, Piterkina, 2007]. One further new species of *Silometopus* has been revealed in vicinity of Lake Elton, the supersaline waterbody located in the northwestern part of the Caspian Lowland (see a Map). The lake is shallow, 0.1–0.8 m deep, filled with a saturated saline solution, and is surrounded by semi-desert landscapes. Seven small bitter-salt rivers, i.e., Khara, Solyanka, Smorogda, etc., flow into the lake. The climate of the region is sharply continental, being characterized by extreme aridity and dryness. Winters are short, but severe, with little snow, the mean temperature is –11 °C, the minimal one is –38 °C. Summers are hot, dry and long-lasting, the mean temperature being +25 °C, the maximal one is +43 °C, see Doskach [1979].

The description of the new *Silometopus*, also revealing its ecological features are the subject of the present paper.

Material and methods

The present paper is based on the spider material collected by pitfall trapping by Kirill Makarov and Andrey Matalin from the environs of the Lake Elton, Russia. Pitfall traps (500 ml plastic cups partly filled with a 4% formaldehyde solution) were set from 10 May 2006 until 10 May 2007 in ten different plant communities: six zonal, i.e. desert and steppe associations, and four azonal ones, i.e. salinas, riverine woods, reed beds, etc., see Makarov & Matalin [2009] for details. The traps remained functioning from November 1st, 2006 until March 31st, 2007, but checked only on the

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Map. Location of Lake Elton. Blue spot — Lake Elton; stippled line — border between Russia (on the left) and Kazakhstan.

Карта. Месторасположение оз. Эльтон. Синий круг — оз. Эльтон; жёлтая ломаная линия — граница между Россией (слева) и Казахстаном.

April 1st, 2007. The specimens collected were preserved in 70% ethanol and studied using a MBS-9 stereo microscope. A Levenhuk C-800 digital camera was used for taking pictures. The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. Scale lines in the figures correspond to 0.1 mm unless indicated otherwise. Figure numbers are given above the scale lines, the alternative distance below them. The terminology of the copulatory organs mainly follows that of Merrett [1963], the authors' names are as in the Abbreviations section below.

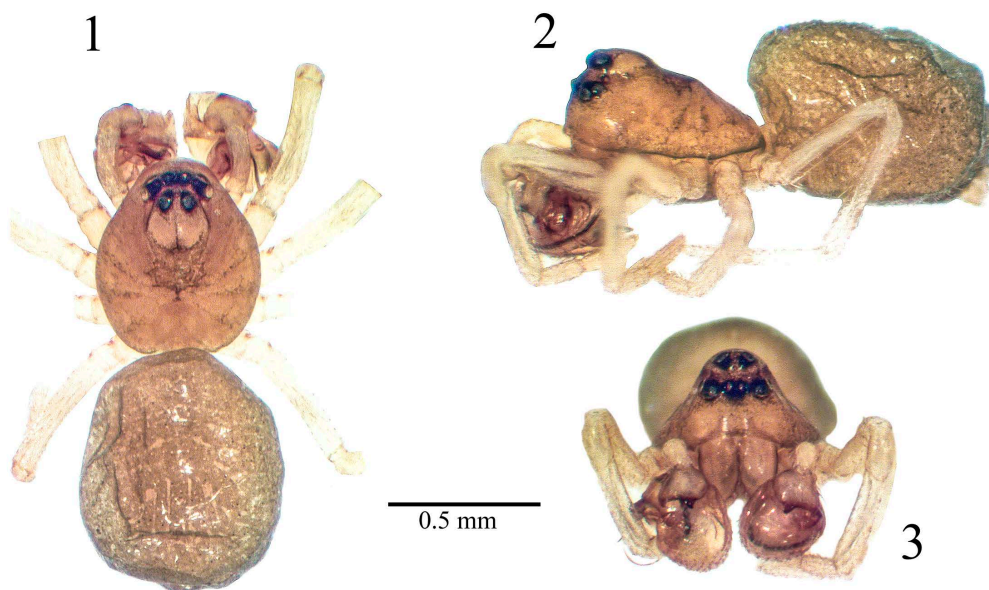
The following abbreviations are used in the text and figures: AP — anterior process of DSA; ARP — anterior

radical process sensu Tanasevitch [2016]; DSA — distal suprategular apophysis sensu Hormiga [2000]; E — embolus; P — paracymbium; R — radix; T — tegulum; TmI — position of trichobothrium on metatarsus I.

Silometopus elton sp.n.

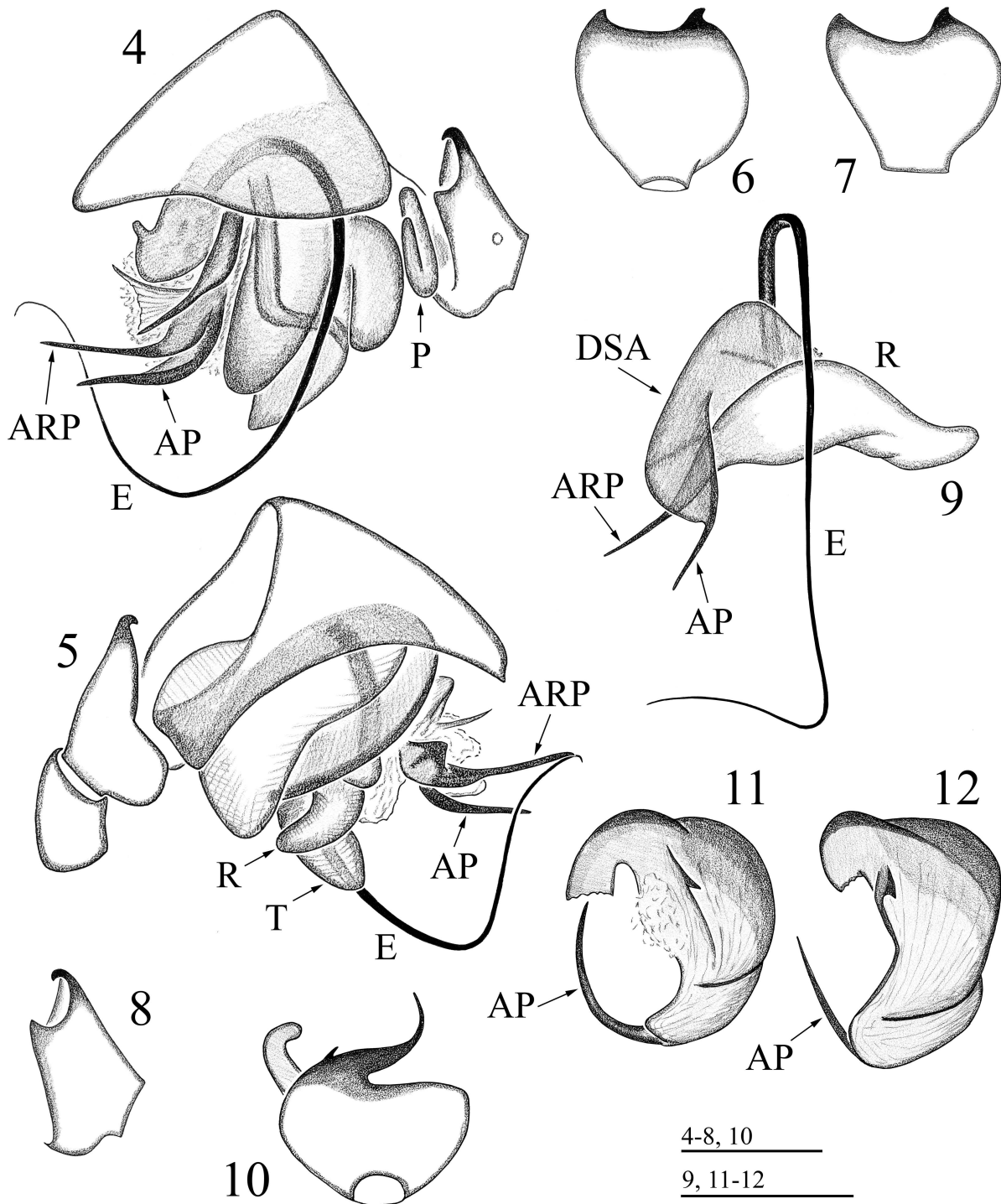
Figs 1–9.

HOLOTYPE ♂ (ZMMU), RUSSIA, Volgograd Area, environs of Lake Elton, 3 km upstream of Khara River mouth, *Phragmites* stands on floodplain terrace on right river bank, 49.214417°N 46.664538°E, pitfall traps, 1.X.2006–1.IV.2007, leg. K. Makarov & A. Matalin.



Figs 1–3. Photographs of *Silometopus elton* sp.n., ♂ holotype. 1–3 — body, dorsal, lateral and frontal views, respectively.

Рис. 1–3. Фотографии *Silometopus elton* sp.n., ♂ голотип. 1–3 — внешний вид, вид сверху, сбоку и спереди, соответственно.



Figs 4–12. Details of male palpal structure of *Silometopus elton* sp.n., ♂ paratype (4–9), and *S. reussi* (Thorell, 1871), specimen from Irkutsk Area, Russia (ZMMU) (10–12). 4–5 — left palp, pro- and retrolateral views, respectively; 6–8, 10 — palpal tibia, 6–7, 10 — dorsal view, different aspects, 8 — prolateral view; 9 — embolus division; 11–12 — distal suprategular apophysis, frontal and prolateral views, respectively.

Рис. 4–12. Детали строения пальпы самца *Silometopus elton* sp.n., ♂ паратип, и *S. reussi* (Thorell, 1871), экземпляр из Иркутской обл., Россия (Зоомузей МГУ) (10–12). 4–5 — левая пальпа, про- и ретролатерально, соответственно; 6–8, 10 — голень пальпы, 6–7, 10 — вид сверху, различные ракурсы, 8 — пролатерально; 9 — эмболиосный отдел; 11–12 — дистальная супратегулярная апофиза, вид спереди и пролатерально, соответственно.

PARATYPE. ♂ (ZMMU), collected together with the holotype.

NAME. The specific epithet is a noun in apposition, referring to the “terra typica”, Lake Elton.

DIAGNOSIS. The species can easily be diagnosed by the presence of two long, slender and sharp processes protruding far beyond the palp (AP and ARP in Figs 4–5, 9).

DESCRIPTION. Male (paratype). Total length 1.43. Carapace slightly modified, with a low elevation, carrying posterior median eyes, as shown in Figs 1–3, 0.60 long, 0.50 wide, pale brown to yellow, with a vague median, grey, polygonal spot and radial stripes. Sulci small, elongated. Chelicerae 0.15 long, unmodified, a mastidion absent. Legs pale yellow, almost white. Leg I, 1.31 long (0.40 + 0.15 + 0.33 + 0.20 + 0.23), IV, 1.53 long (0.45 + 0.15 + 0.43 + 0.30 + 0.20). Chaetotaxy in paratype and holotype unclear: 0.0.0.0 or spines abraded. Metatarsi I–III each with a trichobothrium. Tml 0.73. Palp (Figs 4–9): Tibia rounded in prolateral and dorsal view, with a small, black, hood-shaped tooth apically. Cymbium conical, its retrolateral side with a narrow ridge separated from proximal part of cymbium by a deep hollow. Distal supratרגular apophysis long, its lateral side extended distally into a long and slender spike. Embolic division relatively narrow, elongated, slightly curved, its anterior radical process a long spear. Embolus very long, whip-shaped. Abdomen as in Figs 1–2, 0.80 long, 0.55 wide, pale grey.

VARIABILITY. The holotype and paratype show no significant differences in the description parameters.

Female unknown.

TAXONOMIC REMARKS. The shape of the male carapace in the new species somewhat resembles that in *S. elegans* (O. Pickard-Cambridge, 1873) and *S. reussi* (Thorell, 1871), but the cephalic part in *S. elton* sp.n. is more prominent. The structure of the palp, namely that of the embolic division in the new species, is typical of the genus, being similar to many other European congeners. The presence of a long, slender and sharp process that ends the distal supratרגular apophysis in the new species resembles that in *S. reussi*. However, this process in *S. elton* sp.n. is almost straight, vs. strongly bent in frontal view in *S. reussi* (Fig. 11 cf. Fig. 9). Besides this, these two species are clearly distinguished by the shape of the remaining part of the distal supratרגular apophysis (Fig. 9 cf. Figs 11–12), as well as by the configuration of the palpal tibia (Figs 6–7 cf. Fig. 10).

ECOLOGICAL REMARKS. During a year-round field research, only two specimens of *Silometopus elton* sp.n. have been collected. They were found only in a single habitat among the ten sampled, i.e. *Phragmites* stands on the bank of a bitter-salt river flowing into Lake Elton. This may indicate that the species is rather rare. It can preliminary be characterized as an element of the semi-desert intrazonal fauna of the south-eastern part of the Russian Plain. Specimens of the new species have been taken from traps set during five-months in winter. This allows us to make the preliminary conclusion that the species belongs to the early spring aspect of the araneofauna and is one of the first to start breeding after hibernation.

Acknowledgements. We are deeply grateful to Kirill Makarov and Andrey Matalin (Moscow) whose spider mate-

rial served as the basis for this paper. Thanks also go to Sergei Golovatch (Moscow) for editing an early draft. This study was supported in part by the Presidium of the Russian Academy of Sciences, Program No.41 “Biodiversity of natural systems and biological resources of Russia”.

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Responsible editor K.G. Mikhailov