

***Pelecopsis loksai* sp. n., a new erigonine spider from Hungary (Araneae: Linyphiidae)**

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Summary

A new species of erigonine spider, *Pelecopsis loksai* sp. n., is described from Hungarian calcareous rock grasslands. The very small, winter-mature species, which is not uncommon at its two known localities, has so far been collected only by suction sampler.

Introduction

In 1995 males and females of a previously unknown, very small erigonine species were collected in South Hungary (Villány Mountains) from rock grasslands by hand-held suction sampler. The species has since been refound at the original locality, and also in several samples from a similar habitat in the vicinity of Budapest, 193 km away from the original locality. A description of the new species is here provided, together with the description of habitats and other species found at the collecting sites. All measurements are in mm.

***Pelecopsis loksai* sp. n. (Figs. 1–8)**

Type material: Holotype male, South Hungary, Villány Mountains, Szársomlyó-Hill, Villány (45°51'15"N, 18°24'45"E), suction sampling from limestone rock grassland, 15 September 1995, Szinetár and Samu leg., deposited in Natural History Museum, Budapest, Hungary. Paratypes: Locality as above: 17♂ 19♀ in suction samples, 15 September 1995, 5♂ 4♀, 29 October 1999, Szinetár leg., 5♂ 5♀ deposited in Natural History Museum, Budapest, Hungary. Central Hungary, Buda Mountains, Kecské-hát, Nagykovácsi (47°32'52"N, 18°56'02"E), limestone rock grassland: 21♂ 15♀ in suction samples, 11 October 1999, Samu leg., deposited in collection of Plant Protection Institute, Hungarian Academy of Sciences, Budapest, Hungary.

Etymology: The species is named after the distinguished arachnologist and professor of zoology Dr Imre Loksa, who was a professor and supervisor of both authors, and who conducted long term sampling on the Szársomlyó Mountain, the type locality of the species.

Diagnosis: The cephalic region of males is extended forwards in a proboscis-like manner (Figs. 1–2), ventrally bearing the AME near its tip. The palpal patella is extended, and the tibia has a thin dorsal apophysis, the tegulum is bulging and the suprategulum large and well

developed, distally with a tongue-shape protrusion of the membrane (Figs. 3–4); the embolus tip is short, sickle-shaped and weak. The epigyne and vulva are similar to those of some other *Pelecopsis* species (*P. elongata* (Wider), *P. robusta* Weiss, *P. krausi* Wunderlich), but the positions of the spermathecae and insemination ducts are different (Wunderlich, 1980; Weiss, 1990) (Figs. 7–8).

Description: *Male:* Total length 1.45–1.6. Prosoma: length 0.86–0.96, width 0.4–0.5. Shape distinctive from dorsal and lateral views. Cephalic region raised, with short, sparse, stout hairs, extended forwards in proboscis-like manner (Figs. 1–2); proboscis curved upwards distally, covered with dense hairs directed upwards and backwards. AME positioned ventrally on proboscis tip; four lateral eyes at base of proboscis, PME dorsally on cephalic region. Prosoma greyish yellow, darker around eyes, tip of proboscis, and edge of raised cephalic region. Sternum dark grey with small yellow patches, edge framed with black, erect hairs; anteriorly with triangular depression, posteriorly with straight truncate edge between coxae IV; here sternum width 1.5 times coxa diameter. Opisthosoma: anteriorly somewhat elongated, extending above prosoma, with dorsal scutum. Colour grey, darkening ventrally and towards spinnerets; spinnerets lighter. Dorsal and ventral sides densely covered with hairs, sparser laterally. Chelicerae with 3–4 small teeth on anterior margin, 2–3 small teeth on posterior margin. Maxillae and legs uniformly yellow, except coxae greyish ventrally. Tibiae I–II with 2, tibiae III–IV with 1 dorsal spine. TmI 0.5. Metatarsus IV lacks trichobothrium. Leg measurements:

| | Fe | Pa | Ti | Mt | Ta | Total |
|------------|------|------|------|------|------|-------|
| I | 0.45 | 0.13 | 0.36 | 0.32 | 0.26 | 1.52 |
| II | 0.45 | 0.13 | 0.32 | 0.31 | 0.26 | 1.47 |
| III | 0.45 | 0.13 | 0.28 | 0.26 | 0.23 | 1.35 |
| IV | 0.58 | 0.14 | 0.49 | 0.36 | 0.26 | 1.83 |

Palp (Figs. 3–4): basal segments yellow, tibia and cymbium somewhat darker. Patella considerably extended, tibia with thin dorsal apophysis. Tegulum bulging, suprategulum large and well developed, distally with tongue-shaped protrusion of membrane. Embolus tip short, sickle-shaped and weak.

Female: Total length 1.22–1.47. Prosoma: length 0.61–0.67, width 0.42–0.46. Shape similar to other *Pelecopsis* species, markedly different from that of male (Figs. 5–6); highest anteriorly, between median eyes (see lateral view, Fig. 6). Clypeus high. Overall colour, sternum shape as in male. Opisthosoma: colour and shape similar to male, but less elongated anteriorly. Area between epigastric fold and spinnerets uniformly grey. Anterior margin of chelicerae with 3–4 (sometimes 5) small teeth, second largest, posterior margin with 2–3 small teeth. Colour, leg spination as in male. Leg measurements:

| | Fe | Pa | Ti | Mt | Ta | Total |
|------------|------|------|------|------|------|-------|
| I | 0.44 | 0.14 | 0.34 | 0.30 | 0.28 | 1.50 |
| II | 0.42 | 0.14 | 0.30 | 0.34 | 0.24 | 1.44 |
| III | 0.34 | 0.14 | 0.24 | 0.22 | 0.20 | 1.14 |
| IV | 0.46 | 0.14 | 0.40 | 0.30 | 0.24 | 1.54 |

Epigynum rather simple, similar to that of *P. elongata*, *P. robusta* and *P. krausi*. Round spermathecae visible through cuticle, positioned far apart on each side of epigynum. Sperm ducts approach each other anterior to the epigynal plate forming an X shape (Figs. 7–8).

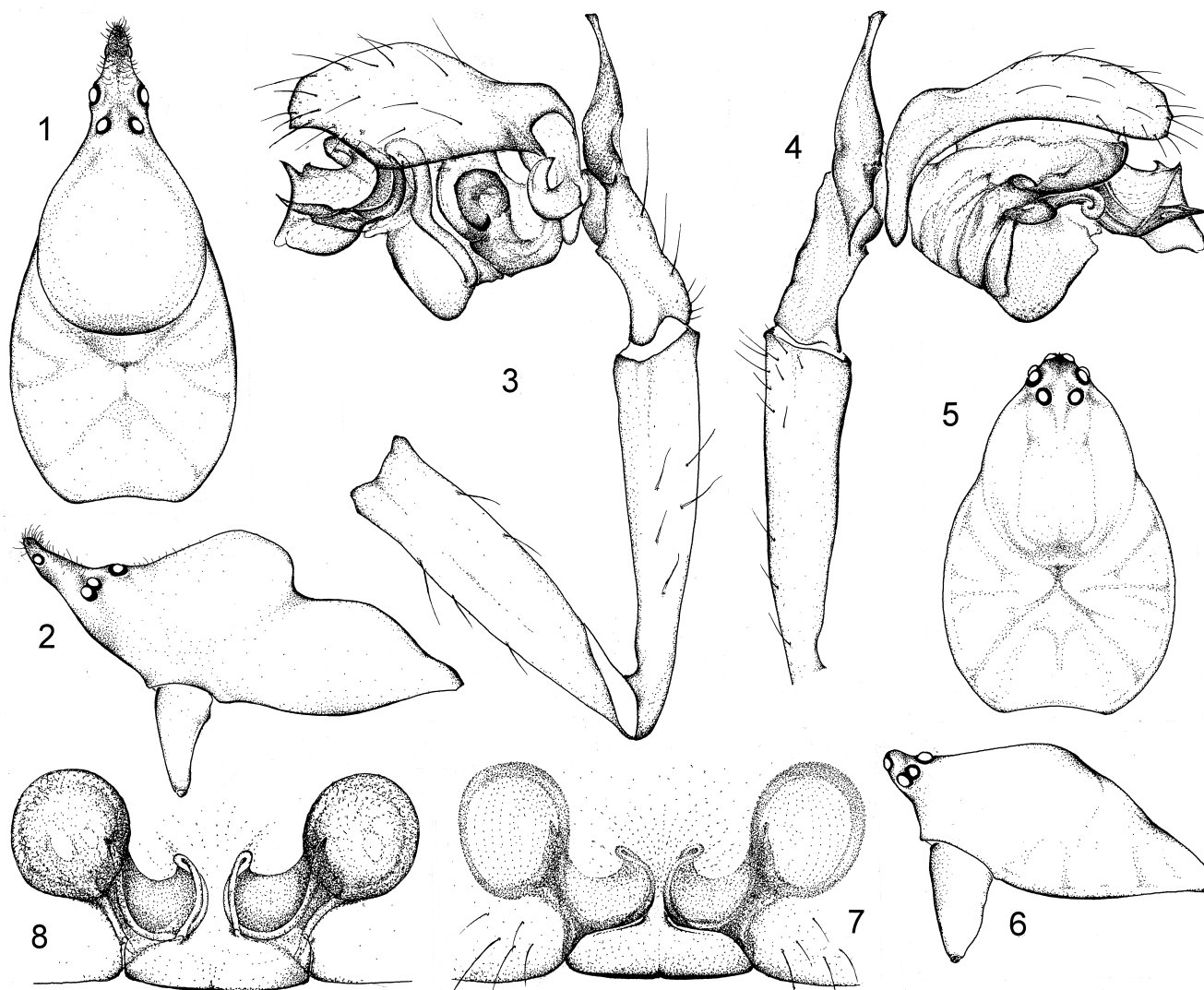
Habitats: The habitat of the holotype is an open limestone rock grassland (*Sedo sopianae*-*Festucetum dalmaticae* Simon, 1964). This relict plant community reaches its northern border in Hungary (Borhidi & Santa, 1999), and it is a typical rock grassland type of the southern slopes of the Villány Mountains. The location itself is a steep south-facing hillside, with shallow soil evolved on Cretaceous and Jura limestone. The grass covers only 40–70% of the soil. The main species of the plant community is *Festuca dalmatica*. Further characteristic plant species are *Sedum neglectum sopianae*, *Convolvulus cantabrica* and *Artemisia alba*. The vegetation of the second locality in the Buda Mountains was a broadly similar *Festuca*-dominated limestone rock grassland, on a south-west facing slope, surrounded with oak forest, near the top of a 430 m high hill. At the Buda Mountains location regular sampling

was done in four close, very similar habitat patches, but the species was collected in only one of them.

Sampling method: In spite of several other sampling techniques (e.g. pitfall trapping) having been used at both locations, specimens were only collected with a motorised hand-held suction sampler (Samu & Sároszpataki, 1995).

Phenology: At the Buda Mountains location year-round regular sampling took place for three years. Adult animals at both locations were captured only between September and February.

Ecology: *Pelecopsis loksai* appears to live in open calcareous rock grasslands, near the soil surface. Spider species that were found at the collecting sites included *Nemesia pannonica* Herman, 1879, *Alopecosa sulzeri* (Pavesi, 1873), *Alopecosa trabalis* (Clerck, 1757), *Eresus cinnaberinus* (Olivier, 1789), *Uloborus walckenaerius* Latreille, 1806, *Trichoncus auritus* (L. Koch, 1869), *Trichopterna cito* (O. P.-Cambridge, 1872), *Sintula spiniger* (Balogh, 1935), *Linyphia tenuipalpis* Simon, 1884, *Agalenatea redii* (Scopoli, 1763), *Oxyopes lineatus* Latreille, 1806, *Hahnia nava* (Blackwall, 1841) and *Ballus rufipes* (Simon, 1868).



Figs. 1–8: *Pelecopsis loksai* sp. n. 1 Male prosoma, dorsal view; 2 Ditto, lateral view; 3 Left male palp, retrolateral view; 4 Ditto, prolateral view; 5 Female prosoma, dorsal view; 6 Ditto, lateral view; 7 Epigynum, ventral view; 8 Vulva, dorsal view.

Discussion

Pelecopsis loksai, especially owing to its peculiar male head region, is a remarkable spider. We decided to place it in the genus *Pelecopsis* primarily because both palpal and epigynal structures show close similarities to those of some other *Pelecopsis* spp., and no such similarities were found with any other related genera. In fact the genitalia in both sexes appear to combine the characters found in several other *Pelecopsis* species. On the other hand, the species exhibits some unique characters: male head form, lack of pit in male ocular region (*P. krausi* also exhibits this feature among the *Pelecopsis* species indigenous to Europe (Wunderlich, 1980)), very long male palpal patella, and different tibial spination. We considered that these differences do not warrant the erection of a new, monotypic genus.

Limestone grasslands are one of the relatively most thoroughly investigated habitat types in Hungary (Loksa, 1966; Szinetár & Lajos, 2000). Our collection in this habitat of a new species, which is locally quite abundant, shows that the application of previously unused sampling techniques can collect new spider species from such microhabitats that are unavailable to other methods (Samu *et al.*, 1997). The new discovery also results from a year-round systematic sampling programme, which makes the detection of winter-adult species possible. The very localised distribution of the species is puzzling. Since the species seems to form stable, reliably collectable populations at the known locations, the possible specific ecological factors which limit its distribution might be worthy of further studies.

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