

SHORT NOTE

A new species of the genus *Mesophylax* (Trichoptera: Limnephilidae) from the Tian Shan Mountains in Kyrgyzstan

Pavel CHVOJKA^{1,2)} & Jan ŠUMPICH^{1,3)}

¹⁾ Department of Entomology, National Museum of the Czech Republic, Cirkusová 1740, CZ-193 00 Praha 9 – Horní Počernice, Czech Republic

²⁾ E-mail: pavel.chvojka@nm.cz; ORCID: <https://orcid.org/0000-0003-0946-0540>.

³⁾ E-mail: jan.sumpich@nm.cz; ORCID: <https://orcid.org/0000-0002-0262-2941>.

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Abstract. A new species of the caddisfly genus *Mesophylax* McLachlan, 1882, *Mesophylax stuchliki* Chvojka sp. nov., is described based on material collected in the Inner Tian Shan Mountains in Kyrgyzstan. Both male and female adults are illustrated and diagnostic characters distinguishing this new species from its congeners, including *M. skalskii* Malicky, 1997 from Tajikistan and *M. pamirensis* Malicky, 1997 from Afghanistan, are provided. The caddisfly fauna of Kyrgyzstan remains poorly studied, and the genus *Mesophylax* has not been recorded there yet. This also represents the first record of this genus in the Tian Shan Mountains.

Key words. Trichoptera, Limnephilidae, caddisflies, description, new species, Kyrgyzstan, Tajikistan, Central Asia, Palearctic Region

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Introduction

The genus *Mesophylax* McLachlan, 1882 is a small genus of the family Limnephilidae (Trichoptera) with a predominantly West Palearctic distribution; its range extends only partially into neighboring areas of the Afrotropical, Oriental and East Palearctic Regions. Fifteen species and subspecies are known from Europe, North Africa and Southwest Asia (TAYBI et al. 2024, MORSE 2026). Only two species have a broader distribution: *M. aspersus* (Rambur, 1842) occurs in Europe (except for the northern parts), North Africa, the Levant, and Yemen, and *M. impunctatus* McLachlan, 1884 is known from western, central, and southeastern Europe and Anatolia (MALICKY 1998, 1999; NEU et al. 2018; TAYBI et al. 2024). Other species have a limited distribution or are even endemic. This also applies to two Central Asian species, *M. skalskii* Malicky, 1997 and *M. pamirensis* Malicky, 1997, which are documented only from their holotypes from Tajikistan and Afghanistan, respectively (MALICKY 1997, 1998).

The Trichoptera fauna of Kyrgyzstan is still very insufficiently known; the first checklist includes only 22 caddisfly species (KÜÇÜKBASMACI & CANBULAT 2020). However, this publication somewhat underestimates the diversity of the caddisfly fauna, as it does not take into account certain historical sources from the period when the territory of

present-day Kyrgyzstan was part of Russian Turkestan. Furthermore, publications written in Cyrillic were not excerpted by KÜÇÜKBASMACI & CANBULAT (2020). Very recently, a new species from the genus *Apataniana* Mosely, 1936 (Apataniidae) was described from Kyrgyzstan (IVANOV et al. 2025). Currently, only two species from the family Limnephilidae are known from Kyrgyzstan: *Pseudostenophylax micraulax* (McLachlan, 1878) and *Psilopterna hirsuta* Martynov, 1928 (KÜÇÜKBASMACI & CANBULAT 2020). An additional limnephilid species belonging to the genus *Mesophylax* was collected very recently during lepidopterological research in the Inner Tian Shan Mountains. It turned out to be a new species, the description of which is provided here.

Material and methods

A lepidopterological survey was conducted in the Tian Shan Mountains in Kyrgyzstan during 2024–2025. A portable insect trap equipped with an ultraviolet LED light was used. The light trap was operated throughout every night. In the morning, the collected insects were sorted by order, and Trichoptera specimens were transferred to 75% ethanol. In the laboratory, the abdomens of the studied specimens were detached, cleaned in 10% KOH, and examined in glycerin. Recently collected specimens are preserved in



75% ethanol and deposited in the entomological collection of the National Museum of the Czech Republic, Prague (NMPC). Two additional specimens from the collection of the Museum für Naturkunde Berlin – Leibniz-Institut für Evolutions- und Biodiversitätsforschung (MfN) are pinned, and the cleaned abdomens are preserved in glycerin.

Taxonomy

Mesophylax stuchliki Chvojka sp. nov.

(Figs 1–8)

Type material. HOLOTYPE: ♂ (NMPC): “KYRGYZSTAN, Inner Tian-Shan Mts., Moldo-Too Range, Naryn region, 33 km N of Baetov, Kurtka valley, 41°33'54"N, 75°01'13"E, 2050 m, 14.ix.2025, Jan Šumpich leg.”, “*Mesophylax stuchliki* sp. nov., P. Chvojka det. 2026, HOLOTYPUS, Mus.Nat.Pragae” [red printed label]. PARATYPES: **KYRGYZSTAN:** 3 ♂♂ 2 ♀♀ (NMPC), the same data as holotype; 1 ♀ (NMPC), Alay range, Osh region, Karamyk env., Ok-Suu valley, 39°29'59"N, 71°43'06"E, 2370 m, 18.–19.ix.2025, Jan Šumpich leg.; 1 ♀ (MfN), Kulanak, Naryn River valley, 41°22'14"N, 75°34'26"E, 1809 m, 21.vii.2016, S. Korb leg. **TAJIKISTAN:** 1 ♀ (MfN), Chorog env., 2300 m, 28.vii.1999, [collector unknown].

Description. General appearance as *M. aspersus* (Fig. 1), forewings light brown (in alcohol), posterior section darker, with numerous small light spots. Tergite I straw-coloured, tergites II–VIII brown, sternites yellowish brown, antennae, palps, and legs pale brown. Length of forewings: male 15.5–17.5 mm ($n = 4$); female 18.0–20.5 mm ($n = 2$). Tibial spur formula: male 0, 2, 2; female 1, 2, 2.

Male genitalia (Figs 2–4). Posterior area of tergite VIII with two inconspicuous patches sparsely covered by

spinules. Dorsal part of segment IX reduced to narrow transverse bridge; lateral part very well developed, long, with broadly rounded anterior margin; ventral part short. Superior appendages well sclerotized, bilobed, superior and inferior lobes divided by deep excision; superior lobe hemispherical in dorsal and lateral view, posterior face concave; inferior lobe digitiform, directed dorsomesad. Basal part of intermediate appendage forming vertical strip in caudal view; with distinctive ventrocaudal protrusion in lateral view. Dorsal process of each intermediate appendage strongly sclerotized, projecting caudad; triangular with ventrocaudal tip in lateral view; thin, distally tapering to rounded apex, slightly divergent in dorsal view. Inferior appendages fused with segment IX in basal 3/5, free dorsal portion directed slightly caudad, posterior margin slightly concave, dorsal portion oblong-triangular in lateral view. In caudal view, lateral margin of inferior appendages sinuous, apex with rounded outer angle and pointed inner angle. Caudal face of each inferior appendage concave without any hump covered with long setae. Aedeagus curved dorsad in lateral view, grooved in cross-section. Parameres heavily sclerotized, stouter basally, gradually tapering to apex, continuously curved dorsad in middle, subapical part straight in lateral view; apex with 1–3 small subapical teeth.

Female genitalia (Figs 5–7). Tergite IX and segment X fused into elongated anal tube, wide basally, gradually tapering to apex; dorsal edge convex, ventral edge slightly concave; apex in dorsal view with deeper dorsal excision and shallow ventral excision. Sternite IX produced caudad, tri-



Fig. 1. *Mesophylax stuchliki* Chvojka sp. nov., female from the Western Pamir Mts. Wing span = 38 mm. Photo: W. Mey.

angular in lateral view, membranous dorsally; supragenital plate rectangular, longer than wide, deeply concave without protruding longitudinal ridge. Vulvar scale conspicuously projecting from sternite VIII in lateral view, median lobe shorter than lateral lobes in ventral view.

Remark. One female from the Ok-Suu valley in the Alay Range is identical to the paratypes, with the exception of the median lobe of the vulvar scale, which is slightly bifurcate (Fig. 8). The variability of the shape of the vulvar scale in *Mesophylax* females has been well documented by MALICKY (1998).

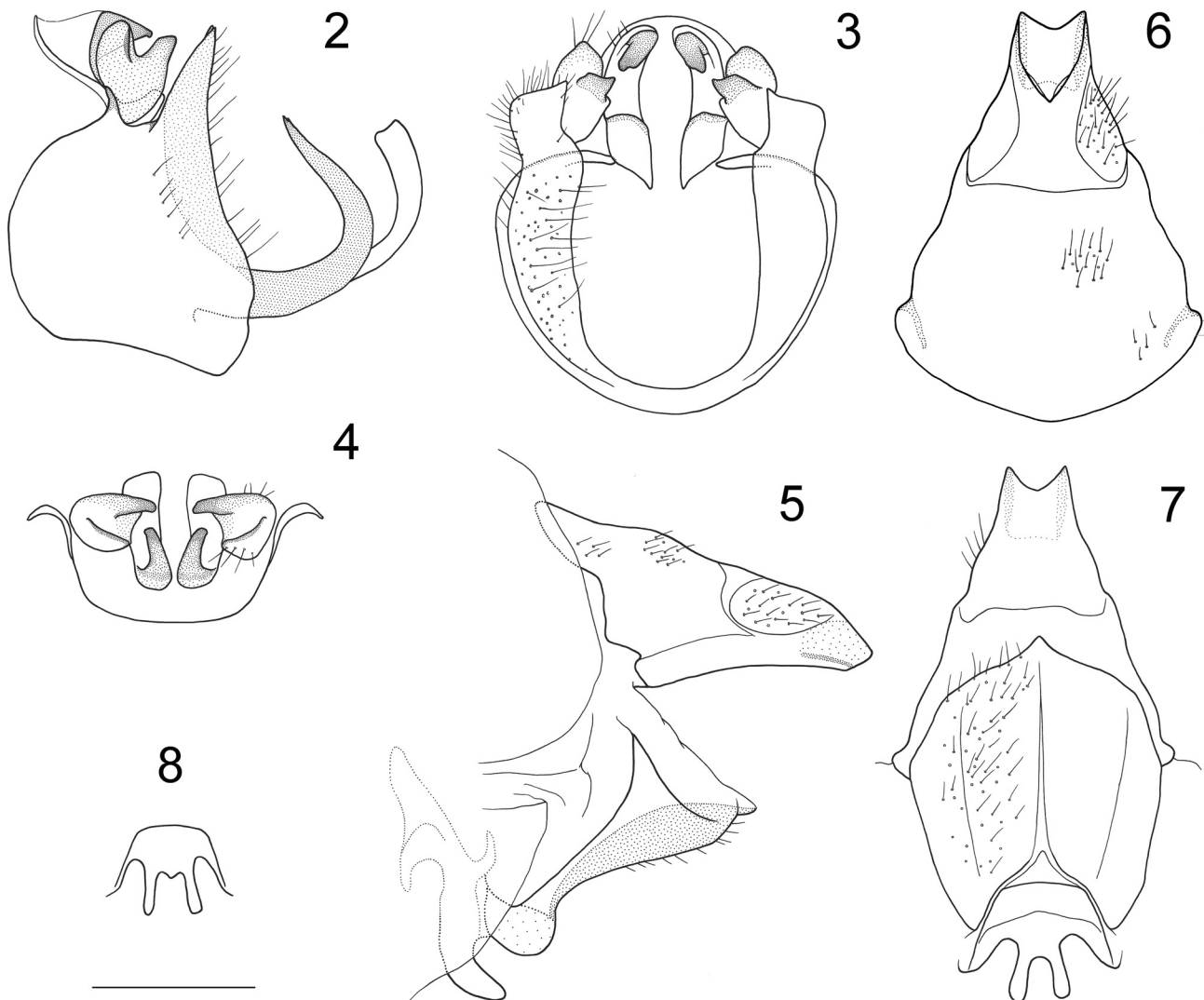
Pupa and larva. Unknown.

Differential diagnosis. The new species can be easily diagnosed by a combination of characters of the male and female genitalia. In males, the dorsal branch of intermediate appendages is small and simple; the posterior margin of the inferior appendages moderately concave in lateral view, its caudal face lacks any hump. The parameres are curved dorsad in the middle; unlike related species from

this region, *M. skalskii* and *M. pamirensis*, no setae are present on the distal half of the paramere. Females of the new species differ from all known *Mesophylax* females in having a long and conical anal tube; the supragenital plate is elongated and concave, and the protruding rounded ridge of the supragenital plate is absent.

Etymology. The senior author dedicates this new species to his late friend, limnologist Prof. Evžen Stuchlík (1958–2025), who introduced him to the study of aquatic insects during his university studies.

Biology. This new species was recorded in the valley of the medium-sized Kurtka River (a tributary of the Naryn River) (Fig. 9) and in the valley of the Naryn River in the Inner Tian Shan Mountains in central Kyrgyzstan, in the Ok-Suu River (a tributary of the Kyzylsu River) in the Alay Range in southern Kyrgyzstan, and in the vicinity of Chorog in the Western Pamir Mountains in southern Tajikistan. Adults were collected from mid-July to mid-September at light in altitude of ca. 1,800–2,400 m.



Figs 2–8. *Mesophylax stuchliki* Chvojka sp. nov. 2–4 – male genitalia, holotype (2 – lateral view; 3 – caudal view; 4 – superior and intermediate appendages, dorsal view). 5–8 – female genitalia (5 – lateral view; 6 – dorsal view; 7 – ventral view; 8 – vulvar scale, ventral view) [5–7 – female from the Kurtka valley; 8 – female from the Alay Range]. Scale bar = 0.5 mm.



Fig. 9. The Kurtka River Valley, the Inner Tian Shan Mountains, Kyrgyzstan, the type locality of *Mesophylax stuchliki* Chvojka sp. nov. Photo: J. Šumpich.

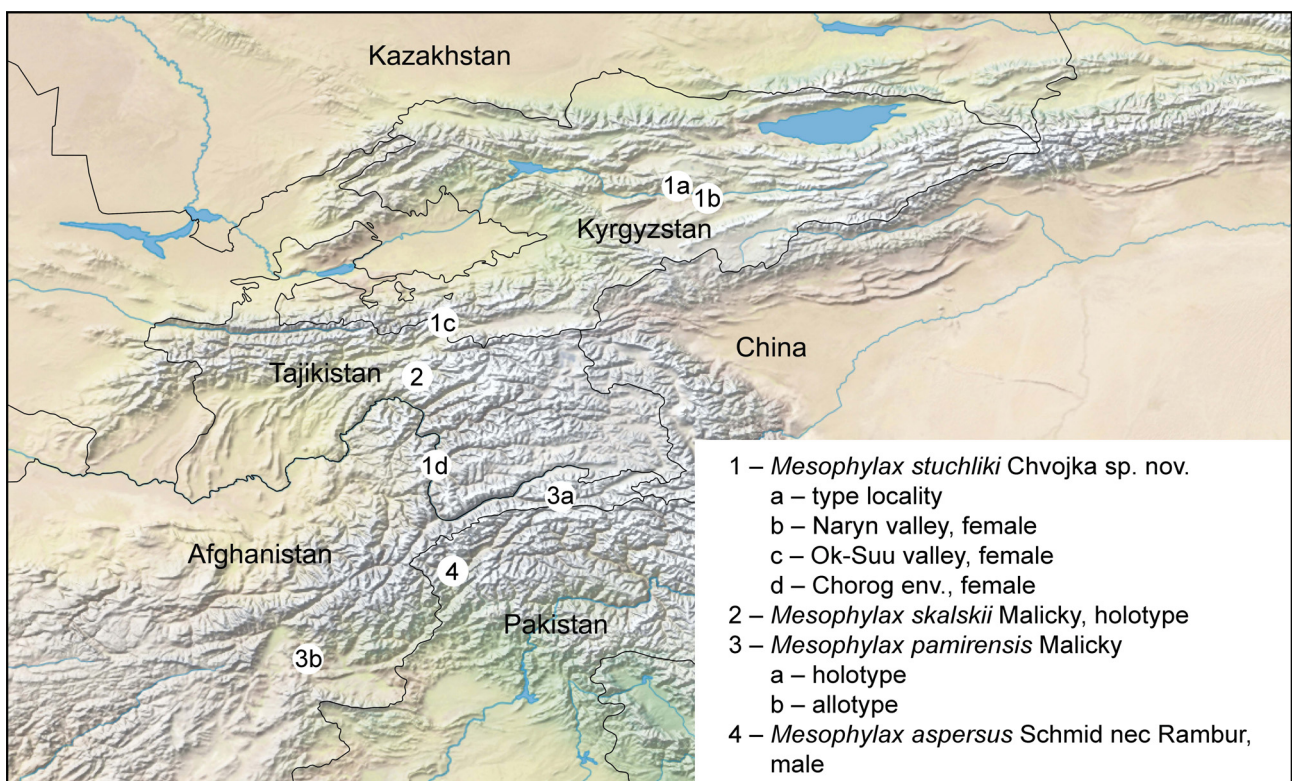


Fig. 10. Distribution of *Mesophylax* spp. in Central Asia.

Distribution. Kyrgyzstan (Inner Tian-Shan Mountains, Alay Range), Tajikistan (Pamir Mountains).

Conclusions

Mesophylax stuchliki Chvojka sp. nov. represents the first record of the genus from the Tian Shan Mountains.

It is the third species of the genus known from Central Asia (in the broader sense) (Fig. 10). MALICKY (1997) described two species from the Pamir Mountains: *M. skalskii* from central Tajikistan and *M. pamirensis* from northeastern Afghanistan. In addition, an unassociated female from the southern Hindu Kush Mts. in Afghanistan was designated

as the allotype of *M. pamirensis*. Another male specimen from the eastern Hindu Kush Mts., originally published by SCHMID (1961) as *M. aspersus*, may also belong to *M. pamirensis* according to MALICKY (1998).

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