Two new species of the family Linyphiidae from the Himalayas (Arachnida: Aranei)¹

Два новых вида семейства Linyphiidae из Гималая
(Arachnida: Aranei)

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КЛЮЧЕВЫЕ СЛОВА: таксономия, пауки, Agyneta, Erigone, Азия, Индия, Непал, горы.

ABSTRACT. Two new species of the family Linyphiidae are described from the Himalayas: Agyneta himalaya sp.n. from Nepal and Erigone jammu sp.n. from India. The new Agyneta Hull, 1911 seems to be most similar to the Siberian arcto-boreo-montane A. ripariensis Tanasevich, 1984, and to the Nepalese A. jiriensis Wunderlich, 1983. The new Erigone Audouin, 1826 resembles the Palaeartic arcto-alpine E. remota L. Koch, 1869 and the nival E. lata Song et Li, 2008, the latter species described from the Hengduan Mts, China. Both new species are clearly distinguished from their most similar congeners by the structural details of the genitalia.

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РЕЗЮМЕ. Из Гималая описаны два новых вида пауков семейства Linyphiidae: Agyneta himalaya sp.n. из Непала и Erigone jammu sp.n. из Индии. Новый вид Agyneta Hull, 1911 близок к сибирскому аркто-борео-монтанному A. ripariensis Tanasevich, 1984 и непальскому A. jiriensis Wunderlich, 1983. Новый вид Erigone Audouin, 1826 имеет явные черты сходства с палеарктическим аркто-альпийским E. remota L. Koch, 1869 и нивальным E. lata Song et Li, 2008, описанному из Синь-Тибетских гор, Китай. Оба новых вида хорошо отличаются от наиболее близких представителей своего рода деталями строения гениталий.

Introduction


Material and methods

This paper is based on the spider material taken by J. Martens and W. Schawaller in India and Nepal, kept in the Senckenberg Museum, Frankfurt am Main, Germany (SMF). The sample number is given in square brackets. All specimens are preserved in 70% ethanol and studied using a MBS-9 stereo microscope. A Levenhuk C-800 digital camera was applied for taking some photographs. Images taken at multiple focal planes were combined with the help of Helicon Focus image stacking software, version 5.1. The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in millimeters. The chaetotaxy is given in a formula, e.g., 2.2.2.1, which refers to the number of dorsal spines on tibia I–IV. Scale lines in the figures correspond to...
Figs 1–7. Details of palpal structure of *Agyneta himalaya* sp.n., paratype (1–6), holotype (7). 1, 7 — right palp: lamella characteristica in Fig. 1 slightly turned and displaced down, vs. that in Fig. 7 in normal position; 2 — cymbium, prolaterally; 3, 4 — tibia, dorsal views, different aspects; 5 — embolic division; 6 — lamella characteristica.

Рис. 1–7. Детали строения пальпа *Agyneta himalaya* sp.n., паратип (1–6), голотип (7). 1, 7 — правая пальпа: на Рис. 1 lamella characteristica слегка повернута и сдвинута вниз, на Рис. 7 lamella characteristica в нормальном положении; 2 — цимбиум, пролатерально; 3, 4 — голень, вид сверху, различные аспекты; 5 — эмболиальный отдел; 6 — lamella characteristica.

0.1 mm unless indicated otherwise. The terminology of copulatory organs mainly follows that of Merrett [1963], Saaristo [1971, 1973], Saaristo & Tanasevitch [1996], Tanasevitch [2017], etc.

ReT — retrolateral tibial tooth; TmI — position of trichobothrium on metatarsus I.

Descriptions

Agyneta himalaya sp.n.

Figs 1–7.


TYPE MATERIAL EXAMINED. *Agyneta jiriensis* Wunderlich, 1983, holotype ♀ (SMF, No. 31667). The type is now a fully faded male with a separated, almost transparent palp devoid of the embolic division.

NAME. The specific name is a noun in apposition, referring to provenance.

DIAGNOSIS. The palp of the new species seems to be most similar to that of the Nepalense *A. jiriensis* Wunderlich, 1983, which was described based on a single male from Jiri District, Nepal. *Agyneta himalaya* sp.n. differs by the shape of the lamella characteristica and the presence of a short additional branch beginning from its base (LB in Fig. 6). Besides that, a median saddle-shaped depression of the carapace in the new species is less expressed than in *A. jiriensis*. The palp of *A. himalaya* sp.n. is also similar to that of the Siberian arcto-boreo-montane *A. ripariensis* Tanasevitch, 1984. The new species is distinguished by the absence of a tooth at the base of the embolus, as well as by the smaller dorso-retrolateral tooth on the palpal tibia. In addition, the palp of *A. himalaya* sp.n. bears some resemblance to that of *A. iranica* Tanasevitch, 2011, from Golestan, Iran [Tanasevitch, 2011], but the new species differs clearly by a straight apical tooth on the lamella characteristica (vs. claw-shaped), and by the absence of a tooth at the base of the embolus (vs. a large tooth).

DESCRIPTION. Male holotype. Dark-coloured specimen. Total length 1.65 (paratype 1.58). Carapace 0.75 long, 0.60 wide, blackish brown. Median saddle-shaped depression of carapace indistinct. Chelicerae 0.30 long, weak. Legs grey-brown. Leg I, 2.36 long (0.60 + 0.20 + 0.58 + 0.53 + 0.45); IV, 2.40 long (0.68 + 0.18 + 0.63 + 0.53 + 0.38). Chaetotaxy: each tibia with a separated, almost transparent palp devoid of the embolic division.

DIAGNOSIS. The palp of the new species seems to be most similar to that of the Nepalense *A. jiriensis* Wunderlich, 1983, which was described based on a single male from Jiri District, Nepal. *Agyneta himalaya* sp.n. differs by the shape of the lamella characteristica and the presence of a short additional branch beginning from its base (LB in Fig. 6). Besides that, a median saddle-shaped depression of the carapace in the new species is less expressed than in *A. jiriensis*. The palp of *A. himalaya* sp.n. is also similar to that of the Siberian arcto-boreo-montane *A. ripariensis* Tanasevitch, 1984. The new species is distinguished by the absence of a tooth at the base of the embolus, as well as by the smaller dorso-retrolateral tooth on the palpal tibia. In addition, the palp of *A. himalaya* sp.n. bears some resemblance to that of *A. iranica* Tanasevitch, 2011, from Golestan, Iran [Tanasevitch, 2011], but the new species differs clearly by a straight apical tooth on the lamella characteristica (vs. claw-shaped), and by the absence of a tooth at the base of the embolus (vs. a large tooth).

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DISTRIBUTION. Known from the highlands of the Himalayas in the Panchthar and Taplejung districts of Nepal.

Erigone jammu sp.n.
Figs 11–14. Details of palpal and epigynal structure of *Erigone jamnu* sp.n. 11 — left palp; 12, 13 — embolic division, different aspects; 14 — epigyne, dorsal view.

Рис. 11–14. Детали строения пальпы и эпигины *Erigone jamnu* sp.n. 11 — левая пальца; 12, 13 — эмболюсный отдел, различные аспекты; 14 — эпигина, вид сверху.


PARATYPES: 1 ♂, 1 ♀ (separated epigyne only) (SMF, labeled as *Erigone* sp. by K. Thaler), collected together with holotype.

NAME. The species name is a noun in apposition, referring to provenance.

DIAGNOSIS. The new species is most similar to the Palaearctic arcto-alpine *E. remota* L. Koch, 1869 and the nival *E. lata* Song et Li, 2008, the latter species described from the Hengduan Mts, China. *Erigone jamnu* sp.n. can easily be distinguished from both above congeners by the longer, solid, retrolateral tooth on the palpal tibia (vs. shorter and bifid); by the shorter posterior radical apophysis, and the poorly-expressed median apophysis in the embolic division. The female of *E. jamnu* sp.n. differs from these two species by the convinent receptacles and the wider lateral edges of the epigyne. The new species also resembles *E. rohtangensis* Tikader, 1981, this being known from the high altitudes in Himachal Pradesh, India [Tikader, 1981], but differs by the longer retrolateral tibial tooth, the
narrower posterior median plate of the epigyne, as well as by the receptacles inclined to each other (vs. diverging).

**DESCRIPTION.** Male paratype. Total length 2.55. Carapace modified as shown in Fig. 8; 1.18 long, 0.90 wide, reddish brown, with teeth at its edge. Chelicerae strong, 0.63. long, with 5–6 teeth on its anterolateral surface, mastidion absent. Legs pale brown. Leg I, 3.10 long (0.85 + 0.30 + 0.75 + 0.70 + 0.50), IV, 2.98 long (0.80 + 0.25 + 0.75 + 0.70 + 0.48). Chaetotaxy 2.2.2.1, length of spines 1–1.5 diameters of segment. TmI, 0.40. Metatarsus IV without trichobothrium. Palp (Figs 11–13): patella with a ventro-apical, conical, slightly curved outgrowth. Palpal tibia elongated, with a retro-lateral tooth apically. Paracymbium with a well-developed distal part. Distal suprategular apophysis relatively long and wide, rounded distally. Radix with three radical extentions: posterior radical apophysis short, thick, rounded; mesal radical tooth strong, stylet-shaped; median radical apophysis slightly curved, pocket-shaped. Embolic membrane relatively short, slightly curved. Embolus proper small, dentiform. Abdomen 0.90 long, 0.63 wide, dark grey.

Female. Epigyne only available. Epigyne (Figs 9, 10, 14) wide, oval, with wide lateral edges. Posterior median plate wide and short. Receptacles small, inclined to each other.

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**References**


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