



## New species of the spider genus *Olios* Walckenaer, 1837 (Araneae: Sparassidae: Sparassinae) from Laos

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### Abstract

Three new species of the spider genus *Olios* Walckenaer, 1837 are described from Laos: *Olios diao* **spec. nov.** (male) from Bolikhamsay Province, Nam Kading National Protected Area, *Olios jaenicke* **spec. nov.** (male) from Champasak Province, Pakse, and *Olios suung* **spec. nov.** (male) from Luang Prabang Province, Phou Khoun.

**Key words:** *Olios diao* **spec. nov.**, *Olios jaenicke* **spec. nov.**, *Olios suung* **spec. nov.**, taxonomy, biodiversity, Indo-Burmese hotspot, Greater Mekong region.

### Introduction

The huntsman spider genus *Olios* Walckenaer, 1837 has been used as ‘dumping ground’ for a long time. Worldwide, 246 species and 5 subspecies are listed (Platnick 2011). It is assumed that not all nominal species described within the genus are congeneric with the type species, *Olios argelasius* (Walckenaer, 1805). Rheims (2010), for instance, suggested that no *Olios* spp. occur in the Nearctic. Australian *Olios* species have been transferred to the genus *Neosparassus* Hogg, 1903 by Hirst (1989). According to Moradmand & Jäger (unpublished data) three species from Iran, Pakistan and India have to be transferred to the genus *Eusparassus* Simon, 1903.

East and Southeast Asian representatives of the genus *Olios* were treated recently by Jäger and Ono (2000), Jäger and Ono (2001), Jäger and Yin (2001), Jäger *et al.* (2002) and Jäger and Praxaysombath (2009). The present paper contributes towards the knowledge of the spider fauna of Laos, a country neglected for a long time in this respect. Currently more than 200 species are recorded from Laos, among them seventeen Sparassidae from the genera *Heteropoda* (7 species), *Olios* (1 species), *Pseudopoda* (5 species), *Rhitymna* (2 species) and *Thelcticopis* (2 species) (compiled in Jäger 2007; Jäger & Praxaysombath 2009, 2011; unpublished data). In the years 2003 to 2011 eight expeditions have been conducted in Laos and the material collected from the genus *Olios* is herein described as three new species. All specimens have been collected from foliage of vegetation in natural to semi-natural habitats (Figs. 28–29).

### Material and Methods

Material is preserved in 70% denatured ethanol. Arising points of embolus, median apophysis and conductor in male palps are given as clock-positions of the unexpanded left palp in a ventral view. All material is deposited in the Senckenberg Research Institute (SMF). Spination pattern is given following Davies (1994): sums of all spines are listed (prolateral, dorsal, retrolateral, ventral), when ventral spines are absent only three digits are listed. Leg formula is given as order of legs according to their length (femur to tarsus) in arabic numbers. Size classes are used according to Jäger (2001: 14): small (<10 mm), medium (>10 and <20 mm), large (>20 and <30 mm), very large (>30 mm).

Abbreviations. ALE — anterior lateral eyes, AME — anterior median eyes, AW — anterior width of dorsal shield of prosoma, OL — opisthosoma length, OW — opisthosoma width, PJ — serial number of Sparassidae

examined by Peter Jäger, PL — length of dorsal shield of prosoma, PLE — posterior lateral eyes, PME — posterior median eyes, PW — width of dorsal shield of prosoma, RTA — retrolateral tibial apophysis, SD — serial number of tissue samples for molecular analyses, I–IV — legs I to IV.

## Taxonomy

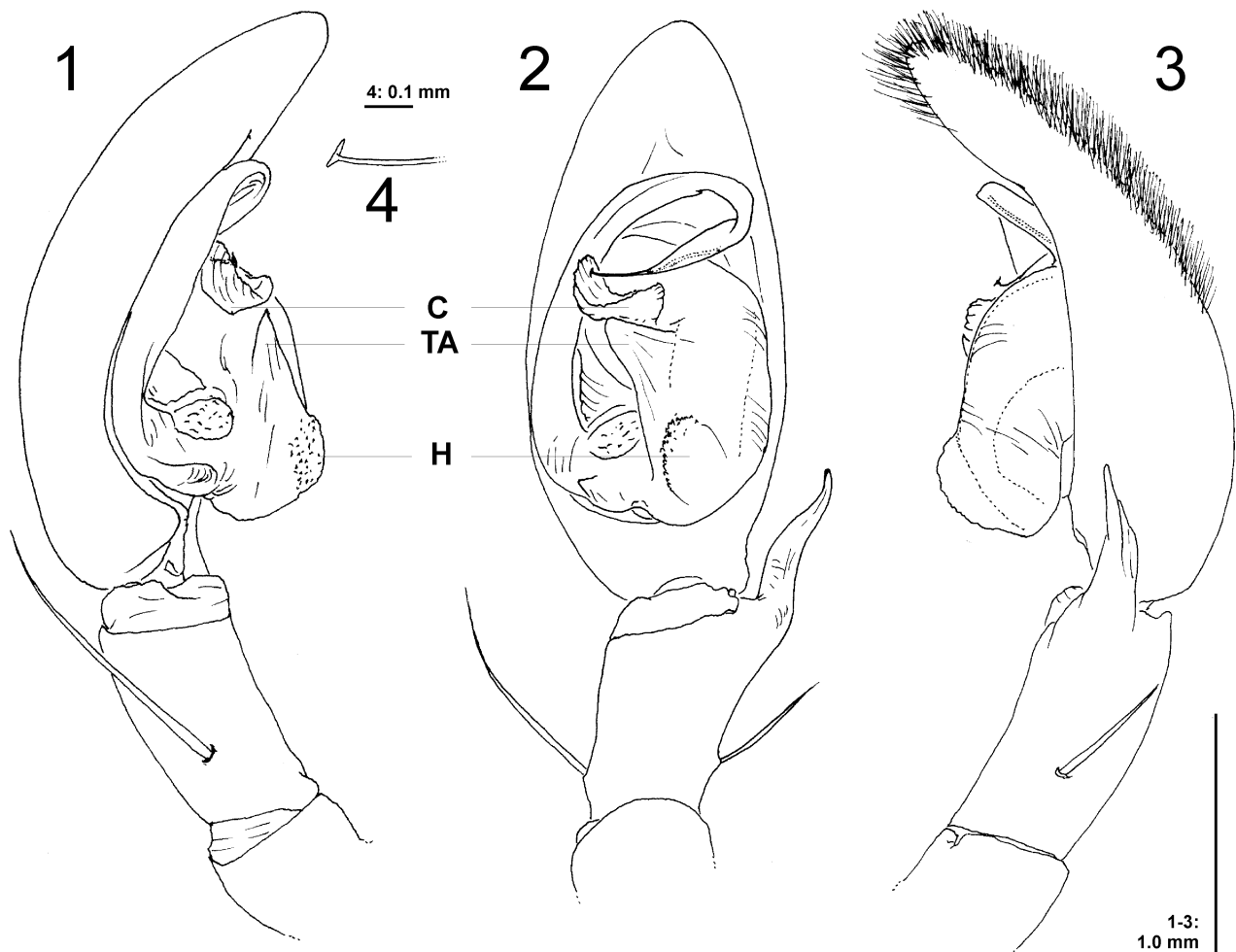
### *Olios diao* spec. nov.

Figs 1–4, 13–16, 27, 29

**Type material: Holotype:** male, LAOS, *Bolikhamsay Province*, Nam Kading National Protected Area, Tad Vang Fong Training Centre, N 18°20'28.8", E 104°08'37.5", 150 m altitude, secondary forest, in foliage, 25 March 2011, by night, by hand, P. Jäger & L. Nophaseud leg. (SMF, PJ 3356, SD 744).

**Etymology.** The Lao word “*diao*” means “single, lone”, stressing that in this genus mostly single specimens are collected; term in apposition.

**Diagnosis.** Small (assumed: to medium-sized) Sparassinae (total length male 9.7). Males exhibit a transversal embolus loop, which is also present in *O. scalptor* Jäger and Ono, 2001, *O. jaenicke* spec. nov. and *O. nanningensis* (Hu & Ru, 1988), the latter known from southern China. It is distinguished from other *Olios* spp. by the distal embolus tip with a transversal structure, by the pointed, triangular tegular apophysis close to conductor, and by the extended proximal tegulum with a hump with granules (Figs 1–4).



**FIGURES 1–4.** *Olios diao* spec. nov., holotype male from Laos, Bolikhamsay Province, Nam Kading National Protected Area. 1–3 left palp (1 prolateral, 2 ventral, 3 retrolateral); 4 embolus tip detail, ventral. C — conductor, H — tegular hump, TA — tegular apophysis.

**Description. Male:** PL 4.9, PW 4.6, AW 2.5, OL 4.8, OW 3.2. Eye diameters and interdistances: AME 0.37, ALE 0.31, PME 0.28, PLE 0.28, AME–AME 0.17, AME–ALE 0.08, PME–PME 0.40, PME–PLE 0.39, AME–PME 0.30, ALE–PLE 0.23, clypeus AME 0.16, clypeus ALE 0.23. Palp and leg measurements: palp 6.3 (2.0, 0.7, 1.1, -, 2.5), I 26.2 (7.2, 2.7, 7.3, 7.1, 1.9), II 28.6 (7.7, 2.8, 8.2, 7.9, 2.0), III 17.7 (5.6, 2.2, 5.2, 5.0, 1.4), IV 22.6 (6.5, 2.1, 6.0, 6.3, 1.7). Leg formula 2143. Spination of palp and legs: palp 131, 120 (bristles), 0011 (with one dorsal bristle); femora I–IV 323 (IV: proximal retrolateral 2 distinctly smaller); patellae I–IV 100; tibiae I–IV 2124; metatarsi I–III 2024, IV 3026. Metatarsus IV distally with small ventral spine, few bristles and scopula. Scopulae on tibia and tarsus I–IV wide, largest width of scopula at metatarsus II: 1.4; metatarsus II width: 0.3. Chelicera with 2 anterior, 5 (right) and 4 (left) posterior teeth, and without denticles.

Palpus as in diagnosis. Embolus arising in a 7.30-o'clock-position from tegulum, running a semicircle, bent distally to an oval; conductor concave, arising prolatero-centrally from tegulum. Tegular apophysis, triangular in ventral view, situated proximo-centrally. RTA tapered, slightly curved in ventral view. Dorsal cymbium with scopula in distal half. Cymbium elongated oval.

Colouration in ethanol (Figs 13–16). Yellow brown with dark reddish brown markings on OS. Dorsal shield of prosoma without pattern, fovea long, reddish brown. Sternum, ventral coxae, and gnathocoxae pale yellowish-brown. Labium proximally darker, distally pale yellowish-brown as other ventral parts. Chelicerae as dorsal shield, distally slightly darker. Legs as dorsal shield, becoming darker distally. Dorsal opisthosoma with indistinct pattern consisting of two rows of small patches beside heart row of patches decreasing in size posteriorly and fusing to longitudinal row of patches; lateral opisthosoma with irregular pattern of partly elongate spots; ventral opisthosoma bright, without pattern.

**Female:** Unknown.

**Distribution.** Known only from the type locality (Figs 27: 2, 29).

### *Olios jaenicke spec. nov.*

Figs 5–8, 17–23, 27

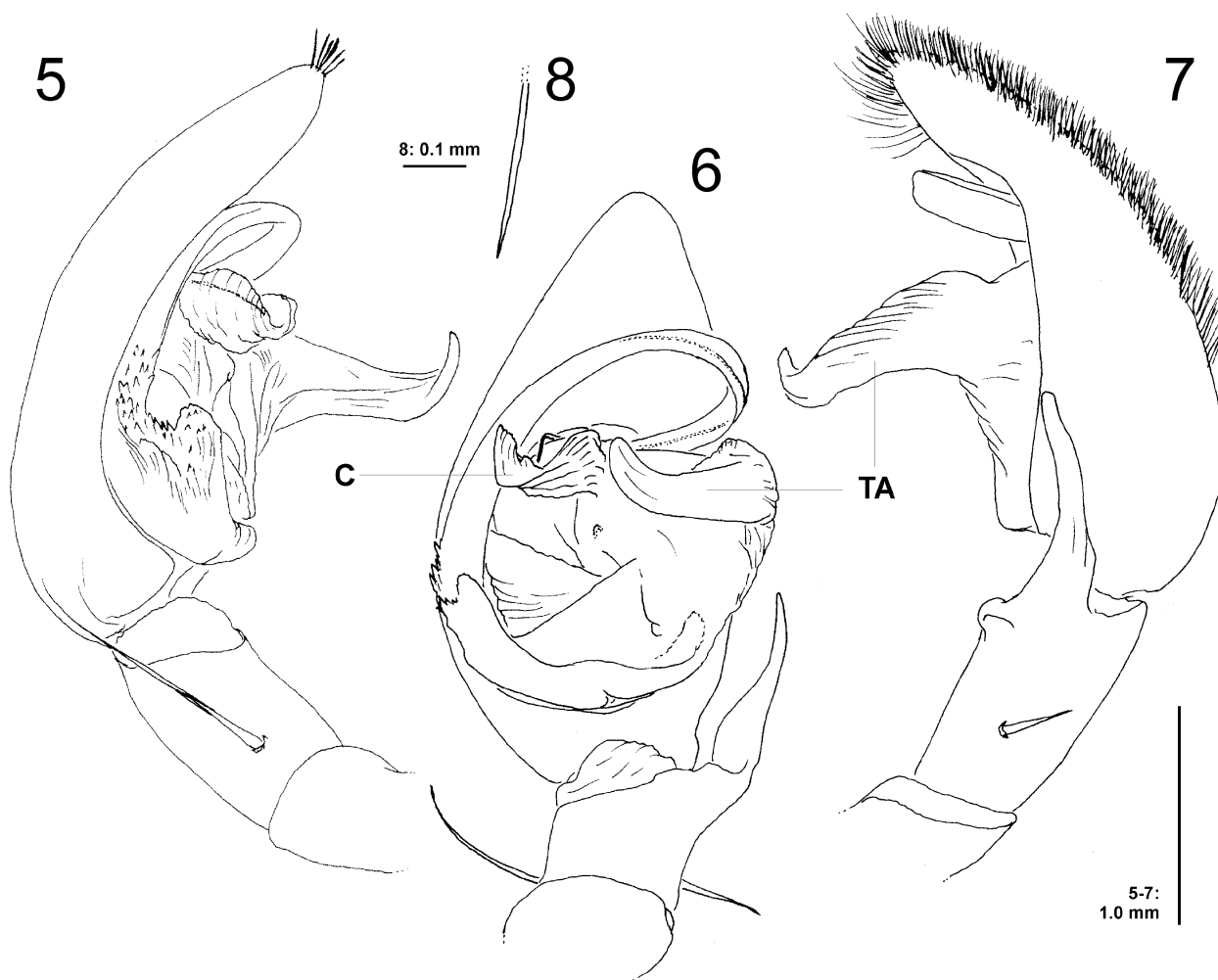
**Type material: Holotype:** male, LAOS, *Champasak Province*, Muang Bachieng, Pakse, Ban Ke, N 15°07'57.4", E 105°48'54.4", 99 m altitude, sandy river banks, shrubs, in foliage, 27 November 2009, by night, by hand, P. Jäger & S. Bayer leg. (SMF, PJ 3234, SD 704).

**Etymology.** This species is dedicated to the German actor and environmental campaigner Hannes Jaenicke for his activities about and documentaries on threatened animal species and for raising general awareness in the public on such topics. Also for his dedication to the Senckenberg Research Society; name in apposition.

**Diagnosis.** Medium sized Sparassinae (total length male 10.4). According to the prominent tegular apophysis, the shape and course of the embolus tip as well as the shape of the RTA in the male palp, *Olios jaenicke spec. nov.* seems to be related to *O. scalptor* Jäger and Ono, 2001 from Taiwan. It is distinguished from other *Olios* spp. by its prominent, long, distally curved tegular apophysis, by the strongly toothed prolateral basal part of embolus, and by the embolus tip without modifications and running from dorsal to ventral side in conductor, and from *O. scalptor* by the absence of a distinct, curved and pointed basal embolic apophysis (Figs 5–8).

**Description. Male:** PL 4.9, PW 4.5, AW 2.5, OL 5.5, OW 3.6. Eye diameters and interdistances: AME 0.38, ALE 0.27, PME 0.27, PLE 0.25, AME–AME 0.26, AME–ALE 0.18, PME–PME 0.48, PME–PLE 0.50, AME–PME 0.39, ALE–PLE 0.30, clypeus AME 0.17, clypeus ALE 0.21. Palp and leg measurements: palp 6.9 (2.1, 0.8, 1.2, -, 2.8), I 24.9 (6.9, 2.6, 6.9, 6.7, 1.8), II 27.3 (7.5, 2.8, 7.7, 7.3, 2.0), III 18.6 (5.5, 2.1, 5.0, 4.5, 1.5), IV 21.2 (6.0, 2.1, 5.7, 5.7, 1.7). Leg formula 2143. Spination of palp and legs: palp 131, 121 (bristles), 0011; femora I–III 323, IV 322 (middle retrolateral spine smaller); patellae I 000, II–III 100, IV 100/000; tibiae I–III 2124, IV 21(0)24; metatarsi I–III 2024, IV 3026. Metatarsus IV distally with small ventral spine, few bristles and scopula. Scopulae on tibia and tarsus I–IV wide, largest width of scopula at metatarsus II: 1.0; metatarsus II width: 0.3. Chelicera with 2 anterior, 5 posterior teeth, and without denticles.

Palpus as in diagnosis. Embolus arising in a 6-o'clock-position from tegulum; conductor strong and concave in ventral view, arising medially in distal half of tegulum, prolaterad. Tegular apophysis arising proximo-retrolaterally from tegulum. RTA tapered, its prolateral margin concave. Dorsal cymbium with scopula in distal half and with longer apical bristle-like hairs. Cymbium tip triangular, tegular appendages extending laterally beyond cymbial margin (Figs 5–8).



**FIGURES 5–8.** *Olios jaenicke* **spec. nov.**, holotype male from Laos, Champasak Province, Pakse. 5–7 left palp (5 prolateral, 6 ventral, 7 retrolateral); 8 embolus tip detail, distal. C — conductor, TA — tegular apophysis.

Colouration in ethanol (Figs 21–23). Yellowish-brown with dark markings on distal legs, Chelicerae and OS. Dorsal shield of prosoma without pattern, with long fovea only slightly marked, dark at anterior eye row. Sternum, ventral coxae, labium and gnathocoxae pale yellowish-brown, labium with distal white lip. Chelicerae dark brown with distal half darker. Legs and palp yellowish-brown, distal segments darker, especially tarsus and metatarsus; patella and tibia indistinctly mottled. Dorsal opisthosoma with distinct dark reddish-brown pattern consisting of patches beside heart fusing in posterior half to transversal connected bars; lateral opisthosoma with strong irregular pattern of partly elongate spots, partly fusing; ventral opisthosoma with tiny dots in median part, appearing slightly darker than part in front of epigastric furrow. For colouration of live specimen see Figs 17–20.

**Female:** Unknown.

**Distribution.** Known only from the type locality (Fig. 27: 4).

***Olios suung* spec. nov.**

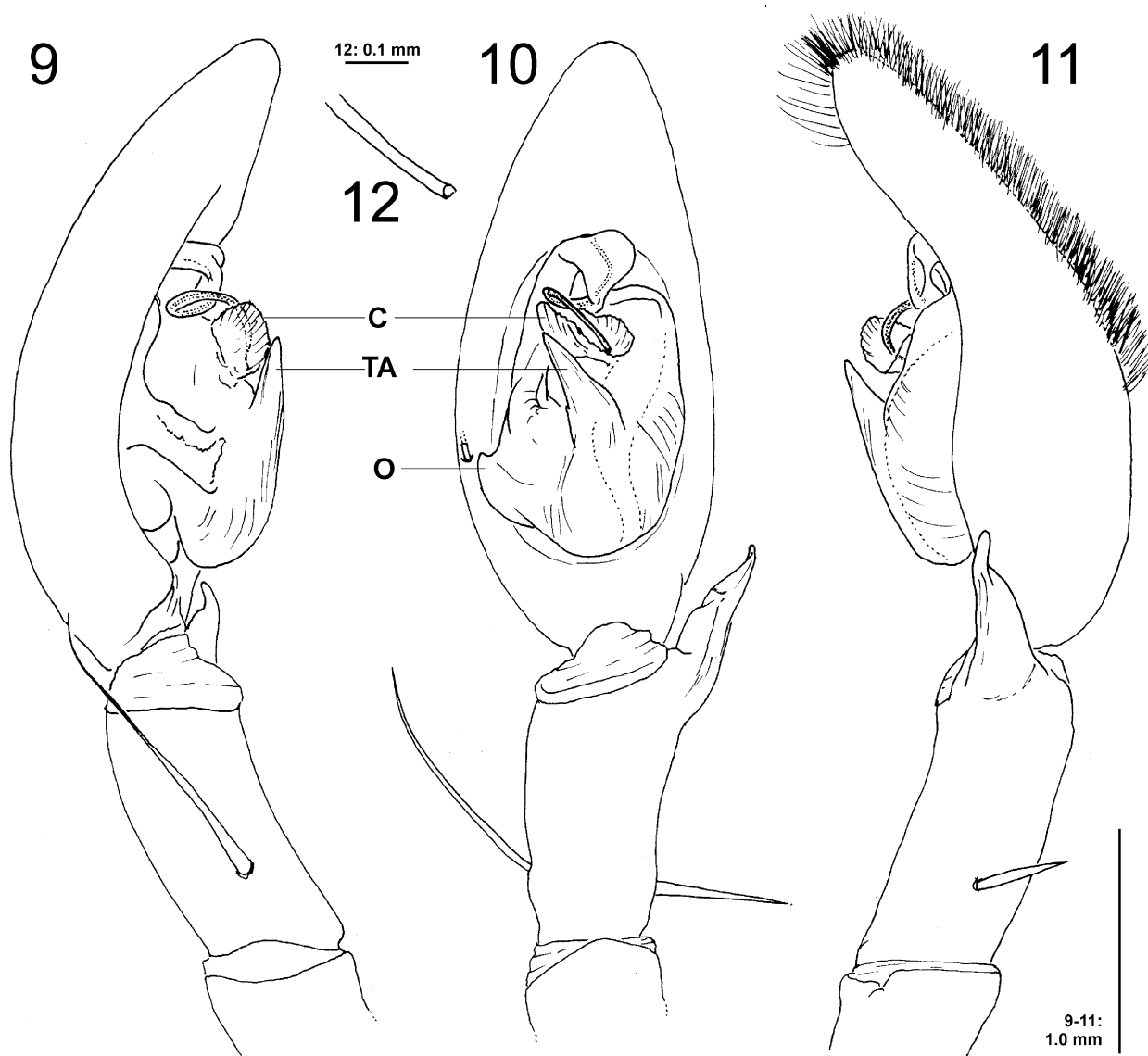
Figs 9–12, 24–28

**Type material: Holotype:** male, **LAOS, Luang Prabang Province**, Phou Khoun, Tham Sua, N 19°20'35.8", E 102°26'19.1", 1226 m altitude, path to cave, shady slope, 18 February 2009, by night, by hand, P. Jäger leg. (SMF, PJ 3364, SD 679).

**Etymology.** The Lao word “süung” means “high”, referring to the relatively high altitude of the type locality; term in apposition.

**Diagnosis.** Medium-sized Sparassinae (total length male 11.0). According to the complex embolus (basal part with bulge and indentation as well as tip with coil and bend) this new species may be related to *O. muang* Jäger and Praxaysombath, 2009 from Khammouan Province, Laos. It is distinguished from other *Olios* spp. by the triangular, strongly pointed tegular apophysis in combination with the characteristic distal coil of the embolus. Base of embolus with outgrowth (recognisable in ventral view).

**Description. Male:** PL 5.2, PW 5.1, AW 2.9, OL 5.8, OW 4.1. Eye diameters and interdistances: AME 0.36, ALE 0.33, PME 0.31, PLE 0.31, AME–AME 0.28, AME–ALE 0.19, PME–PME 0.46, PME–PLE 0.49, AME–PME 0.40, ALE–PLE 0.26, clypeus AME 0.19, clypeus ALE 0.26. Palp and leg measurements: palp 7.6 (2.3, 1.1, 1.5, -, 2.7), I 28.5 (7.7, 3.0, 8.0, 7.6, 2.2), II 31.3 (8.6, 3.2, 8.7, 8.5, 2.3), III 22.8 (6.8, 2.4, 6.1, 5.5, 2.0), IV 25.0 (7.5, 2.3, 6.6, 6.6, 2.0). Leg formula 2143. Spination of palp and legs: palp 131, 211 (bristles), 0011; femora I–III 323, IV 322 (median spine small); patellae I 1(0)00, II 100, III 1(0)00, IV 000; tibiae I 2124, II 3034/2124, III 2124, IV 2114; metatarsi I–III 2024, IV 3026. Metatarsus IV distally with small ventral spine, few bristles and scopula. Chelicera with 2 anterior, 5 posterior teeth, and without denticles. Cheliceral fang joint with 6 bristles. Palpus as in diagnosis. Embolus arising in a 7-o'clock-position from tegulum, with simple tip; conductor concave in ventral view, round in lateral view, arising disto-medially from tegulum. Tegular apophysis arising proximo-centrally from tegulum. RTA tapered, with distal finger-like tip. Dorsal cymbium with scopula in distal half. Cymbium elongated oval (Figs 9–12).



**FIGURES 9–12.** *Olios suung* spec. nov., holotype male from Laos, Luang Prabang Province, Phou Khoun. 9–11 left palp (9 prolateral, 10 ventral, 11 retrolateral); 12 embolus tip detail, distal. C — conductor, O — basal embolic outgrowth, TA — tegular apophysis.



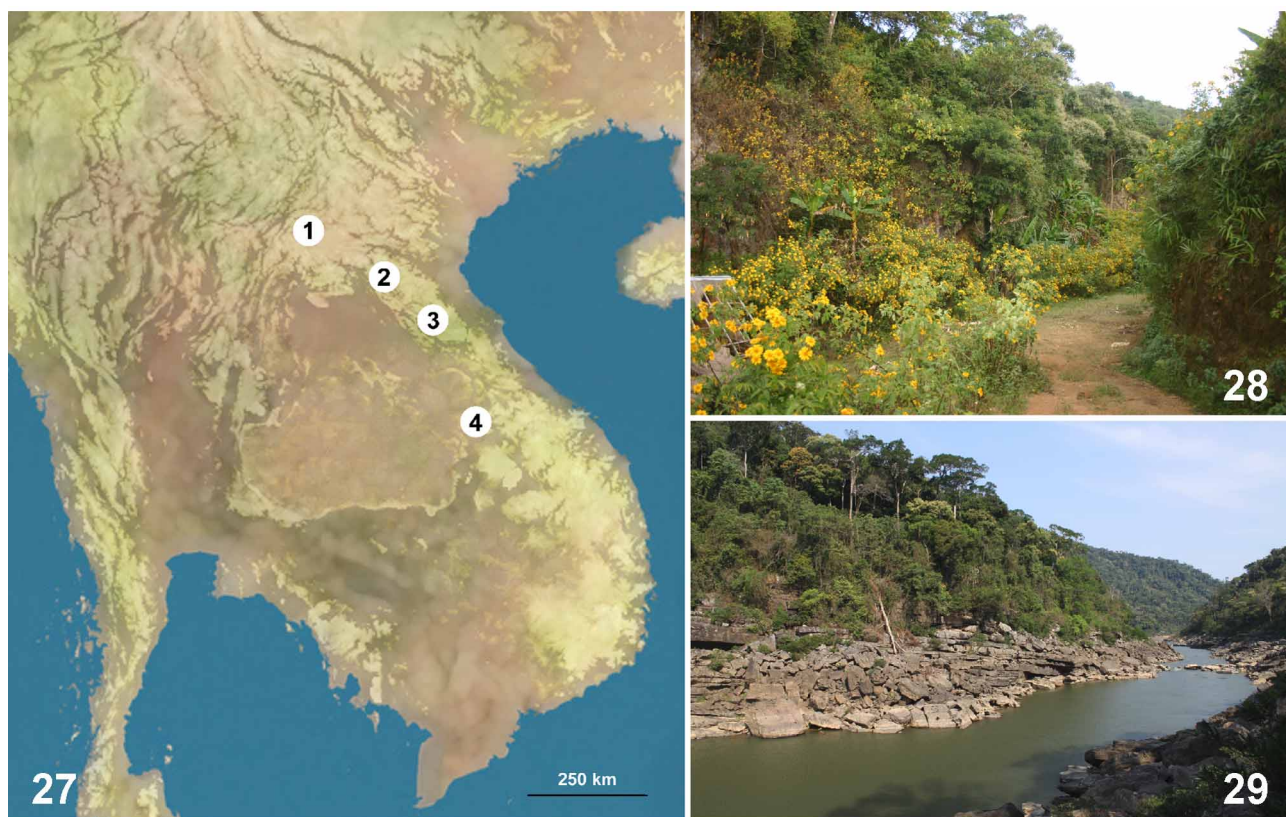
**FIGURES 13–26.** *Olios* spp. from Laos, habitus of holotype males. 13–16 *Olios diao* **spec. nov.**; 17–23 *Olios jaenicke* **spec. nov.**; 24–26 *Olios suung* **spec. nov.** (17–20 alive, others preserved in ethanol).

Colouration in ethanol (Figs 24–26). Yellow brown with dark markings. Dorsal shield of prosoma with small patch in front of fovea, with median line between fovea and eyes and two lines from PLE running posterior; region at anterior eye row dark. Sternum and ventral coxae pale yellowish-brown, without distinct pattern; posterior half

of sternum with indistinct patches; labium and gnathocoxae brown with distal white lip, gnathocoxae with oval white patch at slightly bulgy proximal part. Chelicerae dark especially in distal half, proximal half with each 3 indistinct longitudinal lines. Palp and legs yellowish brown with distal segments darker. Dorsal opisthosoma with characteristic pattern as in *O. jaenicke* **spec. nov.**, but darker, with 6 pairs of bright patches decreasing in size posteriorly. Lateral opisthosoma with many lines most of them fused together. Ventral opisthosoma with distinct irregular pattern consisting of patches in front of and behind epigastric furrow.

**Female:** Unknown.

**Distribution.** Known only from the type locality (Figs 27: 1, 28).



**FIGURES 27–29.** 27 Localities of *Olios* spp. in Laos (1 *O. suung* **spec. nov.**, 2 *O. diao* **spec. nov.**, 3 *O. muang*, 4 *O. jaenicke* **spec. nov.**). 28 Tham Sua, Phou Khoun, Luang Prabang Province, type locality of *Olios diao* **spec. nov.** 29 Tad Vang Fong Training Centre, Nam Kading, Bolikhamsay Province, type locality of *Olios suung* **spec. nov.**

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## References

- Davies, V.T. (1994) The huntsman spiders *Heteropoda* Latreille and *Yiinthi* gen. nov. (Araneae: Heteropodidae) in Australia. *Memoirs of the Queensland Museum*, 35, 75–122.
- Hirst, D.B. (1989) A new genus of huntsman spider (Heteropodidae: Araneae) from south eastern Australia. *Transactions of the Royal Society South Australia*, 113, 7–13.
- Jäger, P. (2001) Diversität der Riesenkrabbenspinnen im Himalaya. Über eine Radiation zweier Gattungen in den Schneetropen (Araneae: Sparassidae: Heteropodinae). *Courier Forschungsinstitut Senckenberg*, 232, 1–136.
- Jäger, P. (2007) Spiders (Araneae) from Laos with descriptions of new species. *Acta Arachnologica*, 56, 29–58.
- Jäger, P., Gao, J. & Fei, R. (2002) Sparassidae in China 2. Species from the collection in Changchun. (Arachnida: Araneae). *Acta Arachnologica*, 51, 23–31.
- Jäger, P. & Ono, H. (2000) Sparassidae of Japan. I. New species of *Olios*, *Heteropoda* and *Sinopoda* with remarks on known species (Arachnida: Araneae). *Acta Arachnologica*, 49, 41–60.
- Jäger, P. & Ono, H. (2001) First records of the genera *Pseudopoda*, *Sinopoda* and *Olios* from Taiwan with descriptions of four new species (Araneae: Sparassidae). *Acta Arachnologica*, 50, 21–29.
- Jäger, P. & Praxaysombath, B. (2009) Spiders from Laos: new species and new records (Arachnida: Araneae). *Acta Arachnologica*, 58, 27–51.
- Jäger, P. & Praxaysombath, B. (2011) Spiders from Laos with forty-two new records and first results from the provinces Bolikhamsay and Champasak (Arachnida: Araneae). *Acta Arachnologica*, 60, 9–31.
- Jäger, P. & Yin, C.M. (2001) Sparassidae in China. 1. Revised list of known species with new transfers, new synonymies and type designations (Arachnida: Araneae). *Acta Arachnologica*, 50, 123–134.
- Platnick, N.I. (2011) *The world spider catalog, version 12.0*. American Museum of Natural History. Available from: <http://research.amnh.org/iz/spiders/catalog>. Accessed 12.XII.2011.
- Rheims, C.A. (2010) On the native Nearctic species of the huntsman spider family Sparassidae Bertkau (Araneae). *The Journal of Arachnology*, 38, 530–537.