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Two new linyphiid species from Borneo and Sumatra (Araneae: Linyphiidae)

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Abstract. The main taxonomic characters of two genera, *Pseudomicrocentria* Miller, 1970 and *Ummeliata* Strand, 1942, are summarised. Two new species, *Pseudomicrocentria uncata*, from Sabah, East Malaysia and *Ummeliata jambi*, from Sumatra, Indonesia, are described. *Pseudomicrocentria uncata*, new species, described only based on male specimens, resembles *P. simplex* Locket, 1982 from Singapore. *Ummeliata jambi*, new species, is particularly similar to the East Palearctic-Oriental *U. insecticeps* (Bösenberg & Strand, 1906). Each new species differs from its congeners by structural details of the genitalia. In addition, *Ummeliata insecticeps* is reported from India and Laos for the first time.

Key words. taxonomy, Erigoninae, Oriental Region, Southeast Asia

INTRODUCTION

The linyphiid spider fauna of Borneo and Sumatra, the largest islands in Southeast Asia, is presently known to contain 29 and 34 species, respectively (see Saaristo & Tanasevitch, 2003; Tanasevitch, 2017a, b, 2018, 2019a, b, 2020). This paper adds one new species to each island's list. Both new species belong to already known, but completely different genera, *Pseudomicrocentria* Miller, 1970 and *Ummeliata* Strand, 1942.

At present, the genus *Pseudomicrocentria* comprises two species: *P. minutissima* Miller, 1970, widespread in western, central, and southern Africa (World Spider Catalog, 2020), and *P. simplex* Locket, 1982, known only from Singapore (Locket, 1982). The second Oriental species of this genus, *P. uncata*, new species, described below, was collected from Sabah, Borneo.

All nine described species of *Ummeliata* occur in the southern parts of the East Palearctic and only one, *U. insecticeps* (Bösenberg & Strand, 1906), distributes further south, to the Oriental Region, including northern Vietnam (Tu & Li, 2004), Laos, and India, herein as first records. *Ummeliata jambi*, new species, collected from Sumatra, is the first and only species of *Ummeliata* known to occur in the Sundaland.

The present paper also provides a summary of the main taxonomic characters of the genera *Pseudomicrocentria* and *Ummeliata*.

MATERIAL AND METHODS

This study is based on material deposited in the Muséum d'histoire naturelle de Genève, Switzerland (MHNG), the Senckenberg Museum, Frankfurt am Main, Germany (SMF), and the Zoological Museum of the Moscow State University, Moscow, Russia (ZMMU). Sample numbers are given in square brackets. All specimens were preserved in 70% ethanol. They were studied using a MBS-9 stereomicroscope. A Levenhuk C-800 digital camera was applied for taking some pictures. The chaetotaxy is given in a formula (2.2.2.1) which refers to the number of dorsal spines on tibiae I–IV. The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in millimetres. The terminology of the copulatory organs mainly follows that of Merrett (1963), Hormiga (2000), and Tanasevitch (1998, 2015).

Abbreviations, used in the text and figures.
a.s.l.—above sea-level
C—convector sensu Tanasevitch (1998) = plate, lamella, auct.
D—duct
DAC—distal apophysis of convector sensu Tanasevitch (2015)
DSA—distal suprategular apophysis sensu Hormiga (2000)
E—embolus
Mt—metatarsus
N.P.—national park
R—radix
TmI—position of trichobothrium on metatarsus I

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TAXONOMY

Order Araneae Clerck, 1757

Family Linyphiidae Blackwall, 1859

Subfamily Erigoninae Emerton, 1882

Pseudomicrocentria Miller, 1970

Type species. *Pseudomicrocentria minutissima* Miller, 1970.

Revised diagnosis. The discovery of *P. uncata*, new species, warrants the diagnosis of the genus as given by Locket (1982) to be refined. Species of this genus are small-sized (total length 1.10–1.40) with an unmodified carapace. The formula of leg chaetotaxy is 2.2.2.1, metatarsi I–III each with a trichobothrium. The male palp is characterised by a very simple structure of the embolic division, the radix being continuous with the embolus. The palpal structure is very similar to that many erigonine genera, particularly *Tapinocyba* Simon, 1884. The genus *Pseudomicrocentria* is easily distinguished from *Tapinocyba* by the absence of sulci on the male carapace, as well as by the formula of leg chaetotaxy 2.2.2.1 vs. 1.1.1.1.

Species included and their distributions. *Pseudomicrocentria minutissima* has been recorded from the Democratic Republic of the Congo (Miller, 1970), Nigeria (Locket & Russel-Smith, 1980), and the Republic of South Africa (Jocqué, 1984). *Pseudomicrocentria simplex* Locket, 1982, is known only from Singapore (Locket, 1982). A third species of the genus, *P. uncata*, new species has been collected on Borneo, East Malaysia and is described below.

Pseudomicrocentria uncata, new species
(Figs. 1, 7–11)

Holotype. Male (MHNG), EAST MALAYSIA, Sabah, Mt Kinabalu N.P., above Gunting Lagadan, 3,400 m a.s.l., 19 May 1987, coll. A. Smetana.

Paratype. 1 male (MHNG), Mt Kinabalu N.P., base of St. John's Peak, 3,950–4,000 m a.s.l., 20 May 1987, coll. A. Smetana [b62].

Diagnosis. *Pseudomicrocentria uncata*, new species, is characterised by a long and narrow radix abruptly bent in the middle. The species is similar to *P. simplex*, originally described from the border between Singapore and mainland Malaysia, but it can easily be distinguished by the shape of the palpal tibia (Fig. 10 cf. Fig. 12), as well as by the bent radix (Fig. 8 cf. Fig. 13). Both Oriental species, *P. simplex* and *P. uncata*, new species, besides having differences in the genitalic structure, differ from their Afrotropical congener, *P. minutissima*, by the normal, not enlarged eyes.

Etymology. The specific name is a Latin adjective, meaning "bent", referring to the shape of the radix in the new species.

Description. I describe the paratype here to avoid causing damage to the holotype. Some measurements of the holotype are given in brackets. Carapace and abdomen shapes, body and leg colouration of holotype are same as in paratype.

Male paratype. Total length: 1.30 (1.28 in holotype). Carapace unmodified (as in Fig. 1), 0.63 long, 0.48 wide (0.63 and 0.46 in holotype, respectively), pale greyish brown. Eyes normal, not enlarged, sulci absent. Chelicerae 0.30 long, mastidion absent. Legs pale brown. Leg I 1.53 long (0.43 + 0.20 + 0.35 + 0.30 + 0.25), IV 1.56 long (0.43 + 0.20 + 0.35 + 0.35 + 0.23). Chaetotaxy: 2.2.2.1. Length of spines 1–1.5 diameters of corresponding leg segment. TmI 0.48 (0.50 in holotype). Metatarsus IV without trichobothrium. Palp (Figs. 7–11): Tibia slightly elongated, with a small rounded process antero-retrolaterally. Paracymbium very small, L-shaped. Tegulum with a sharp outgrowth distally. Distal suprategular apophysis short, more or less transparent, with a small tooth at base. Median membrane reduced. Convector absent. Radix long, narrow, abruptly bent in the middle. Embolus very short, slightly curved. Abdomen (Fig. 1) 0.65 long, 0.45 wide (0.63 and 0.48 in holotype, respectively), dark grey.

Female unknown.

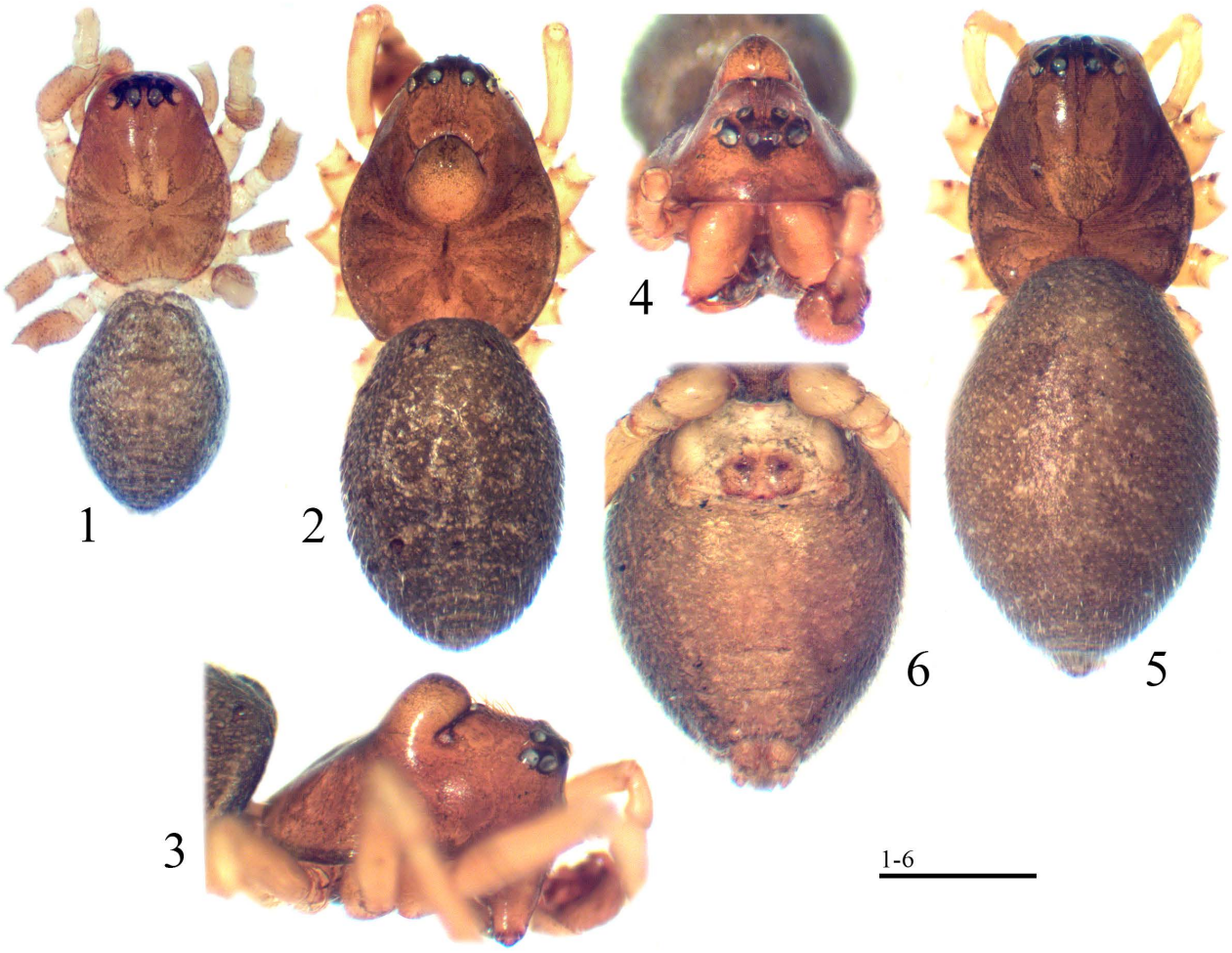
Distribution. So far known only from Sabah, Indonesia.

Ummeliata Strand, 1942

Type species. *Hummelia incisa* Schenkel, 1936.

Revised diagnosis. The discovery of *U. jambi*, new species, warrants the diagnosis of the genus as given by Eskov (1980, as *Hummelia*) to be refined. Species of this genus are small-sized (total length about 2.0–3.0) with a modified carapace. The formula of chaetotaxy is 2.2.1.1, metatarsi I–IV each with a trichobothrium. The male palp is characterised by the presence of a large convector, a relatively long and coiled embolus, and a totally or strongly reduced radix in the embolic division. By having a large body, the chaeto- and trichobothriotaxy patterns, the modified male carapace, the long and coiled embolus, and the strongly reduced radix, *Ummeliata* resembles *Nasoonaria* Wunderlich & Song, 1995. However, *Ummeliata* clearly differs from the latter by the absence of a convector in the embolic division, as well as by the poorly developed distal suprategular apophysis, which is hypertrophied in the males of *Nasoonaria*.

Species included and their distributions. The genus includes nine species distributed in the southeastern parts of the Palearctic (World Spider Catalog, 2020), but one species, *U. insecticeps* (Bösenberg & Strand, 1906), has also been recorded from the Oriental Region: northern Vietnam (Tu & Li, 2004), and is here reported from northern Laos and northern India for the first time, as shown below. The new species, described below, is the second representative of the genus to be registered in the Oriental Region.



Figs. 1–6. *Pseudomicrocentria uncata*, new species, male paratype (1), *Ummeliata jambi*, new species, male holotype (2–4) and female paratype (5–6). 1–2, male body, dorsal view; 3–4, male prosoma, lateral and frontal views, respectively; 5, female body, dorsoventral view; 6, female abdomen, ventral view. Scale = 0.5 mm.

***Ummeliata jambi*, new species**
(Figs. 2–6, 14–20)

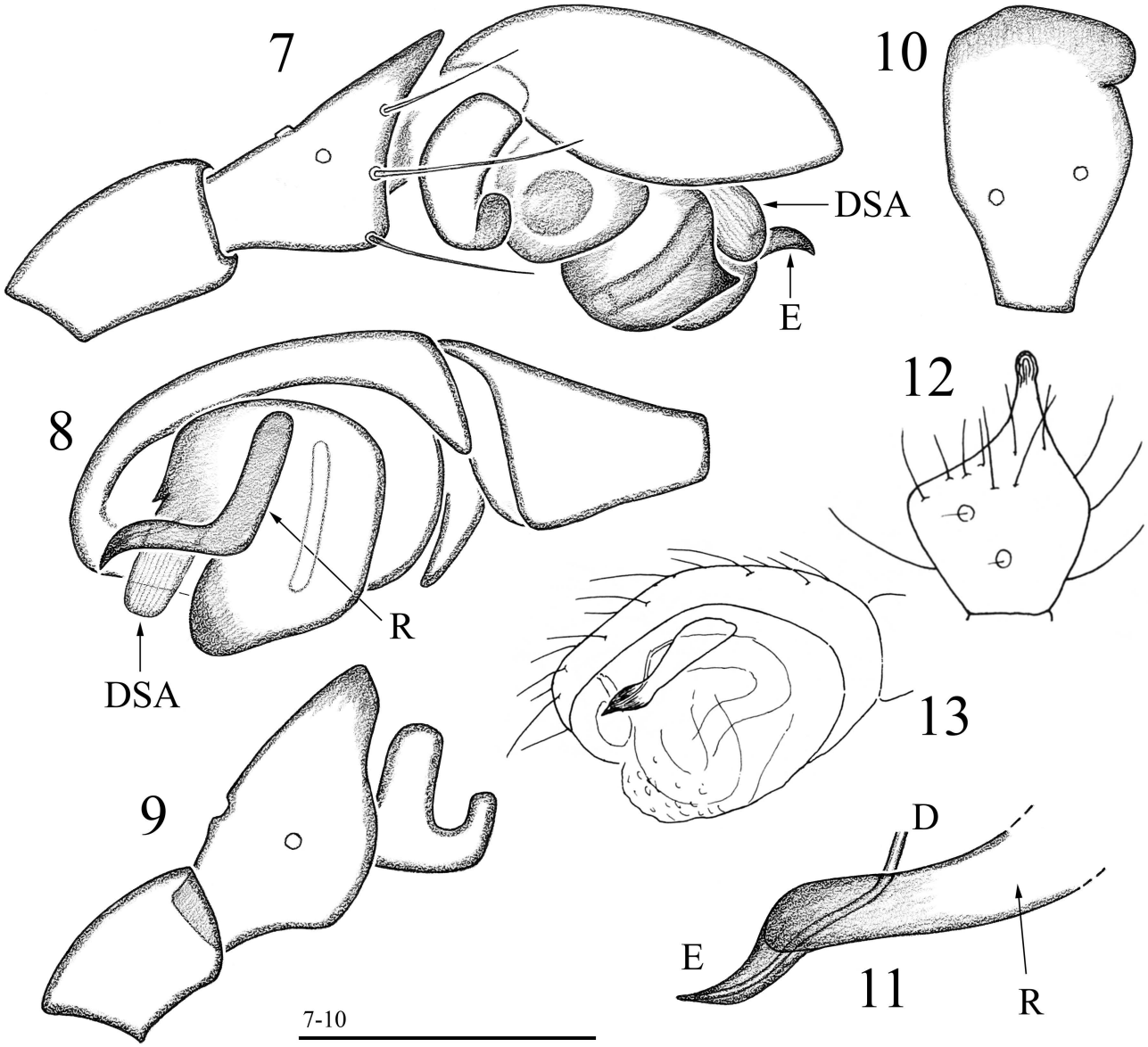
Holotype. Male (MHNG), INDONESIA, Sumatra, Jambi, Mt Kerinci, 2,500 m a.s.l., sifting vegetation debris in moss forest; 12 November 1989, coll. D. Burckhardt, I. Löbl and D. Agosti [14].

Paratype. 1 female (MHNG), collected together with the holotype.

Diagnosis. *Ummeliata jambi*, new species, is characterised by a highly reduced mastidion on the chelicera, the distal apophysis of the convector in males well protruding forward, and by the deeper notch on the anterior wall of the epigyne in females. The species seems to be especially similar to *U. insecticeps* (Bösenberg & Strand, 1906), which occurs in southern Siberia, the Russian Far East, Korea, Japan, China (including Taiwan), and northern Vietnam (Tu & Li, 2004). The male of the new species is easily distinguishable from the larger postocular elevation, the highly reduced mastidion, the reduced radix, as well as the distal apophysis of the convector well protruding forward. The female differs by the deeper notch on the anterior wall of the epigyne and the absence of a tubercle at the bottom of the notch. The distal apophysis of the convector protruding from the palp in *U. jambi*, new species, resembles that of *U. xiaowutai* Han & Zhang, 2014 (termed by the authors as the anterior radical process), known from northeastern China (Han & Zhang, 2014). However, the shapes of the distal apophysis of the convector and other parts of the palp are different in both species.

Etymology. The specific epithet is a noun in apposition referring to its type locality, the Jambi province of Sumatra.

Description. Male holotype. Total length 2.03. Carapace modified: middle part of carapace with a rounded elevation separated from cephalic part by a deep slit (as in Figs. 2–4), 1.00 long, 0.75 wide, greyish brown with indistinct radial stripes. Eyes normal, not enlarged. Chelicerae 0.38 long, mastidion highly reduced. Legs pale brown. Leg I 2.71 long (0.75 + 0.25 + 0.63 + 0.60 + 0.48), IV 2.89 long (0.75 + 0.25 + 0.73 + 0.68 + 0.48). Chaetotaxy: 2.2.1.1. Length of spines 1–2 diameters of corresponding leg segment. TmI 0.68–0.69. Metatarsi I–IV each with a trichobothrium.



Figs. 7–13. Details of male palp structure of *Pseudomicrocentria uncata*, new species, paratype (7–11), and *P. simplex* Locket, 1982 (12–13), after Locket (1982). 7, right palp, retrolateral view; 8, 13, right palp, prolateral view; 9, palpal patella, tibia, and paracymbium, prolateral view; 10, 12, palpal tibia, dorsal view; 11, distal part of embolic division. Scale = 0.1 mm. Figs. 11–13, not to scale.

Palp (Figs. 14–19): Tibia slightly elongated, with a small tubercle apically. Paracymbium narrow, L-shaped, with a blunt tooth in middle part. Tegulum distally bearing a small, almost transparent, poorly visible protegulum. Distal suprategular apophysis relatively short, rounded. Median membrane reduced. Convector very large, V-shaped, its distal apophysis well protruding forward. Radix reduced, embolus coiled, with a membranous edge. Abdomen (Fig. 2) 1.18 long, 0.78 wide, dark grey.

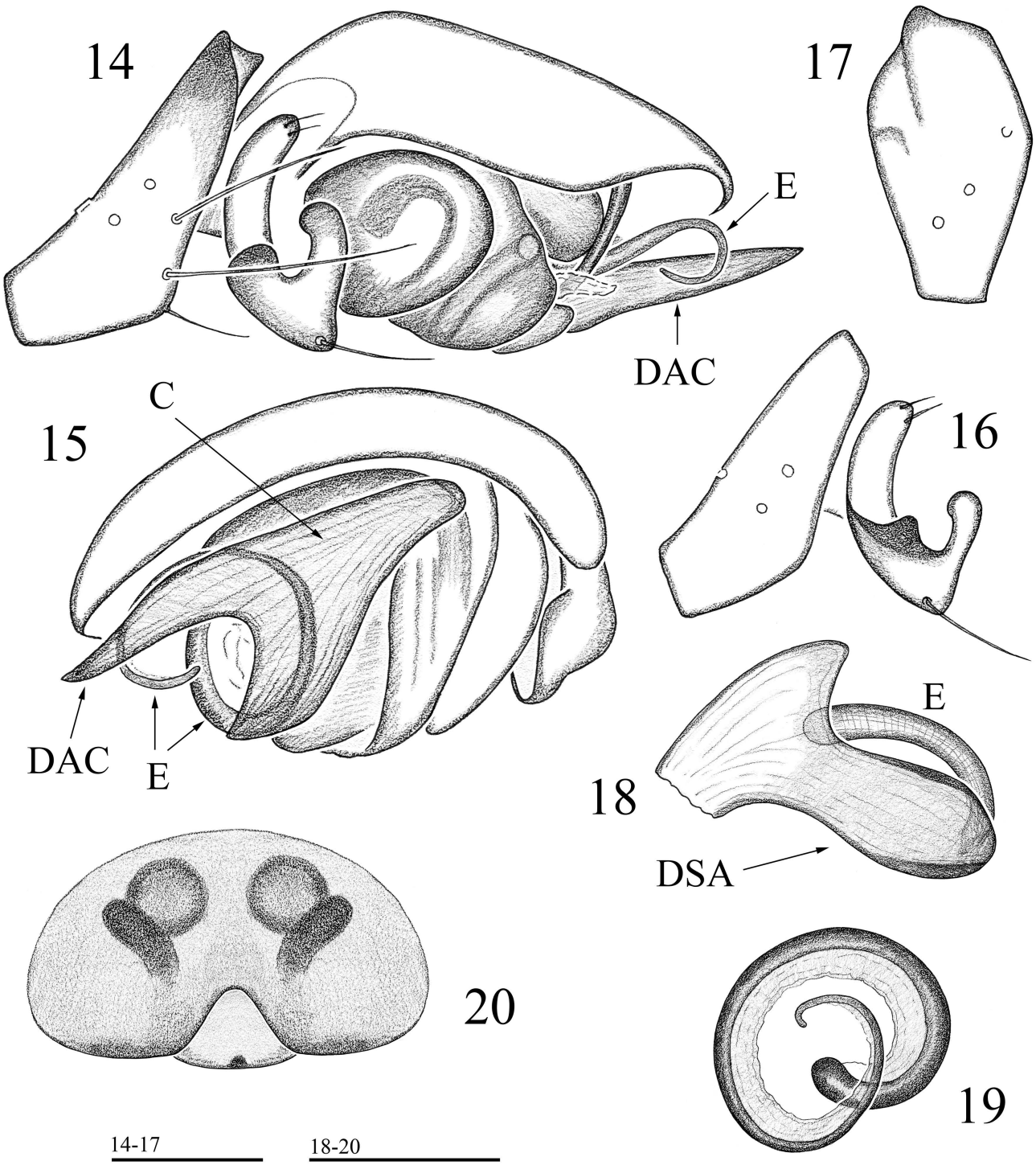
Female paratype. Total length 2.25. Carapace unmodified (as in Fig. 5), 0.95 long, 0.78 wide, greyish brown with indistinct radial stripes. Eyes normal, not enlarged. Chelicerae 0.38 long, mastidion absent. Legs brown. Leg I 2.49 long (0.68 + 0.25 + 0.60 + 0.53 + 0.43), IV 2.72 long (0.78 + 0.25 + 0.68 + 0.63 + 0.38). Chaetotaxy: 2.2.1.1. Length of spines 1–2 diameters of corresponding leg segment. TmI 0.75. Metatarsi I–IV each with a trichobothrium. Abdomen (Figs. 5, 6) 1.43 long, 1.00 wide, dark grey. Epigyne (Figs. 6, 20): Anterior wall (= ventral plate, auct.) with a deep and rounded notch. Receptacles spherical.

Distribution. Known only from the type locality in Sumatra, Indonesia.

Ummeliata insecticeps (Bösenberg & Strand, 1906)

Oedothorax insecticeps Bösenberg & Strand, 1906: 163, pl. 12, fig. 257.
Hummelia insecticeps Eskov, 1980: 1743.
Ummeliata insecticeps Chikuni, 1989: 57, fig. 53.

For full synonymy list, see World Spider Catalog (2020).



Figs. 14–20. Details of male palp structure of *Ummeliata jambi*, new species, male holotype (14–19) and female paratype (20). 14–15, right palp, retro- and prolateral views, respectively; 16, palpal tibia and paracymbium, lateral view; 17, palpal tibia, dorsal view; 18, distal suprategular apophysis and part of embolus, lateral view; 19, embolic division, frontal view; 20, epigyne, ventral view. Scale = 0.1 mm.

Material examined. 1 female (SMF), LAOS, Luang Nam Tha Province, Vieng Phou Kha, Phon Pasat, Tham Pasat Thia, 705 m a.s.l., 20°46′37.2″N, 101°01′00.2″E, outside cave, secondary forest, leaf litter, sifting, 5 March 2008, coll. P. Jäger; 1 male, 2 females (ZMMU), INDIA, Meghalaya, Sohra Area, plateau, 25.27°N 91.82°E, 1,320 m a.s.l., 14–26 December 2013, coll. K. Tomkovich.

Distribution. The species occurs in the Baikal region and Sayan Mountains in southern Siberia, Russia; Maritime Province and Kurile Islands, the Russian Far East; Japan; Korea; China (including Taiwan) (World Spider Catalog, 2019). In the Oriental Region, the species has hitherto been known only from northern Vietnam (Tu & Li, 2004), being recorded from Laos and India for the first time.

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