



Two new species of *Pharta* Thorell, 1891 with the description of *Ibana senagang* gen. et sp. nov. (Araneae: Thomisidae)

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Abstract

Two new species of *Pharta*, *P. sudmannorum* sp. nov. (♂♀, Borneo) and *P. koponeni* sp. nov. (♂, Thailand) are described. Furthermore, *Ibana senagang* gen. nov. & sp. nov. from Malaysia is described based on its exceptional palp, which has a reduced, movable conductor and thick-long spines on the distal, ventral surface of the tibia, reminiscent of *Epidius* Thorell, 1877.

Key words: Stephanopinae, crab spiders, biodiversity, taxonomy, Borneo

Introduction

The Stephanopinae crab spider genus *Pharta* Thorell, 1891, currently contains five described species and remains poorly known (Benjamin 2011; Platnick 2014). All species are restricted to tropical South East Asia. The type species of *Pharta*, *P. bimaculata* Thorell, 1891 and three other species were recently redescribed (Benjamin 2011). However, two species are known only from their females (Platnick 2014). The aim of the present paper is to describe two new species of *Pharta* and a new genus and a species, which is somewhat similar to *Pharta*. This paper is the second of a projected series presenting results of collections made by Christa Deeleman-Reinhold and co-workers of spiders living in the forest canopy of South East Asia.

Material and Methods

Specimens were borrowed from the Rijksmuseum van Natuurlijke Histoire, Leiden (RMNH). Methodology follows Benjamin (2011). Specimens used for habitus illustrations were placed in 70% ethanol and photographed using a dissecting microscope (Zeiss Discovery V20) with top illumination and a magnification of up to 150x. Digital images were taken with a Zeiss AxioCam HRC camera. Images were edited using Zeiss ZEN Pro software package. Left structures are depicted unless otherwise stated. Setae are usually not depicted in the final palp drawings. All measurements are given in millimeters. Prosoma measurements refer to the length and width of the carapace. Morphological abbreviations; see Benjamin (2011) for details: ALE anterior lateral eyes, AME anterior median eyes, AER posterior row of eyes, C conductor, CD copulatory duct, CO copulatory opening, E embolus, PER posterior row of eyes, PLE posterior lateral eyes, PME posterior median eyes, S spermatheca, STD sperm duct; connects to embolus.

Taxonomy

Family Thomisidae

Genus *Pharta* Thorell, 1891

Remarks. *Pharta* is described and diagnosed in Benjamin (2011).

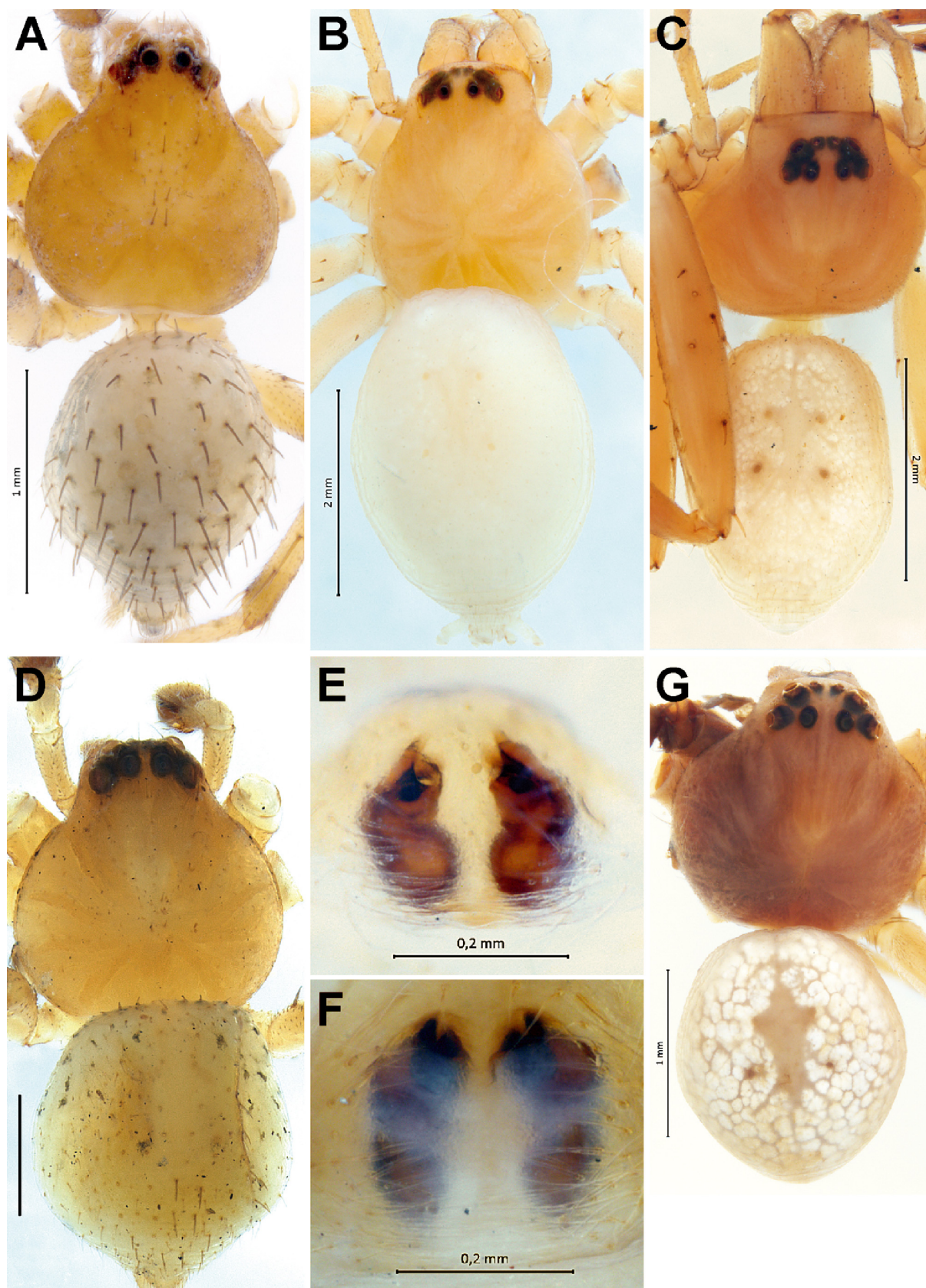


FIGURE 1. A–C, E–F *Pharta sudmannorum* sp. nov. D *Pharta koponeni* sp. nov. G *Ibana senagang* sp. nov. A male holotype (RMNH.ARA.15918), habitus, dorsal. B, E female (RMNH.ARA.15911); C female (RMNH.ARA.15915) habitus, dorsal; D male holotype (RMNH.ARA.15912), habitus, dorsal; E, vulva, ventral; F vulva, ventral (RMNH.ARA.15922). Scale bars = 0.2 mm (A–C, E, F), 0.5 mm (D), 1.0 mm (G).

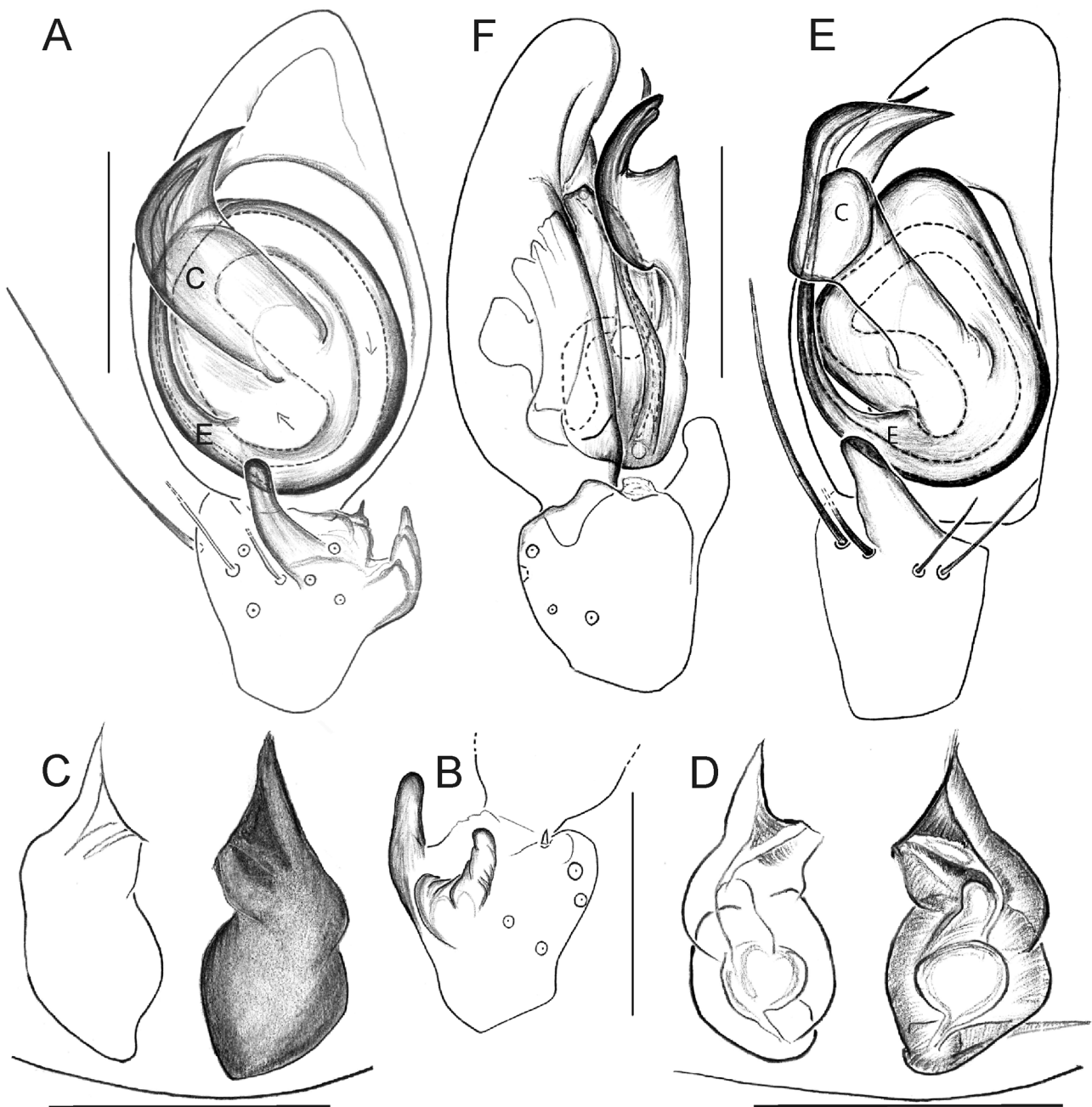


FIGURE 2. A–D *Pharta sudmannorum* sp. nov. E–F *Pharta koponeni* sp. nov. A–B, E–F left male palp (A, E ventral, B, F retrolateral); C epigynum (ventral); D vulva (ventral). Scale bars = 0.2 mm.

***Pharta sudmannorum* sp. nov.**

Figs 1A–C, 1E, F, 2A–D

Type material: Holotype ♂ from **MALAYSIA: Borneo:** West Sabah, 6° 06' N 116° 50' E, Mt. Kinabalu national park, Sorinsim, 15 year old adjacent secondary forest, 500–700 m, Loc 50, canopy fogging *Vinex pinnata*, leg. A. Floren, 12 March 1997; badly preserved (RMNH.ARA.15918).

Other material examined. **MALAYSIA: Borneo:** 1 female, West coast of Sabah, 6° 02' N 116° 42' E, Poring Hot Springs, Canopy walk, leg. C. L. Deeleman and P. Zaborowski, 01 April 1998 (RMNH.ARA.15922). **MALAYSIA: Borneo:** 1 ♀, West Sabah, 6° 02' N 116° 42' E, Mt. Kinabalu national park, Poring Hot Springs, primary forest, 500–700 m, canopy fogging *Aporosa* sp., leg. A. Floren, 19–26 March 1996, loc 14 (19 February 1996), epigynum missing (RMNH.ARA.15915). Same data, 1 ♀ (RMNH.ARA.15911).

Etymology. This species is named in honor Heinrich and Marga Sudmann of Bonn, in appreciation of their assistance to me and my family during our visits to Bonn.

Diagnosis. Males of *P. sudmannorum* **sp. nov.** can be distinguished from male congeners by the curved conductor with a pointed tip and the presence of two apical tibial apophysis; females by the presences of funnel-shaped copulatory ducts and oval spermathecae. Further, in *P. sudmannorum* **sp. nov.** and all known female congeners the epigynum is roughly the shape of an '8', with the top half containing the funnel-shaped copulatory ducts and the bottom half the spermathecae. In *P. sudmannorum* **sp. nov.** the bottom half is larger than the top half (Figs 1E, 2D).

Description. Male (holotype): Total length: 2.5; prosoma length: 1.3, width: 1.1. Leg I: femur 1.4, patella 0.4, tibia 1.2, metatarsus 0.9, tarsus 0.5. Coloration and markings as in Fig. 1A. Light to dark yellow, possibly greenish in life. Prosoma and sternum uniformly covered with sub erected, brownish, strong setae (not movable), legs covered with partially paired, moveable spines. (Fig. 1A). ALE > PLE > PME > AME. AER, PER recurved, eyes on brown colored, converging mounds. Palp with a curved conductor with a pointed tip and two apical tibial apophysis (Figs 2A, 2B).

Female: Total length: 3.8; prosoma length: 1.8, width: 2.0. Leg I: femur 2.0, patella 0.8, tibia 2.0, metatarsus 1.4, tarsus 0.8. Leg formula 2143. General description as in male. Coloration and markings as in Figs 1B, C. Epigynum and vulva with funnel-shaped copulatory ducts and oval spermathecae as in Figs 1E, 1F, 2C, 2D.

Distribution. Known only from the type locality, Mt. Kinabalu National Park.

Remarks. Males and females are grouped based on appearance and should be reassessed when more material is available.

***Pharta koponeni* sp. nov.**

Figs 1D, 2E, 2F

Type material: Holotype ♂ from **THAILAND: Kanchanaburi Province:** Erawan National Park, leg. C. L. Deeleman & P. R. Deeleman, 16 October 1987, evergreen forest, sweeping (RMNH.ARA.15912).

Etymology. This species is named in honor of my colleague Seppo Koponen of Turku, Finland.

Diagnosis. Male of *P. koponeni* **sp. nov.** can be distinguished from male congeners by the longer, hammer-shaped conductor. The conductor is shorter and sharply curved in *P. sudmannorum* **sp. nov.**

Description. Male. Total length: 2.2; prosoma length: 1.1, width: 1.1. Leg I: femur 1.4, patella 0.5, tibia 1.2, metatarsus 0.9, tarsus 0.5. Leg formula 1243. Coloration and markings as in Fig. 1D. Light yellow, probably greenish in life. Opisthosoma roundish. Prosoma uniformly covered with short, brownish spines (Fig. 1A). ALE > PLE > PME > AME. AER, PER recurved, eyes on brown colored, converging mounds. Palp with a hammer-shaped conductor as in Figs (2E, 2F).

Female: unknown

Distribution. Known only from the type locality.

***Ibana* gen. n.**

Type species: *Ibana senagang* sp. nov.

Etymology. Named for the Iban people of Borneo. It is considered feminine in gender.

Diagnosis. Males of *Ibana senagang* **gen. nov., sp. nov.** can be distinguished from males of other Stephanopinae by the following combination of characters: presences of a smaller conductor (less than half the size of the cymbium), presence of a sperm duct inward turn, hook-shaped tibial apophysis, palpal tibia furnished with at least 3 thick long spines, lack of trichobothria on the dorsal surface of the cymbium. Females of the new genus can be distinguished by the presences of kidney shaped spermathecae and longer copulatory ducts, lack of an epigynal lip and epigynal teeth.

Further, the new genus is most closely related to and likely to be confused with *Cebrenninus* Simon, 1887, *Epidius* Thorell, 1877 and *Pharta*, known from the Oriental region. It can be separated from these genera in addition to the characters given above, as follows: from *Cebrenninus* by the longer copulatory ducts and lack of an extra tegular process; from *Epidius* - by the absence of an elongated male palp tibia (tibia is longer than the

cymbium in *Epidius*); from *Pharta* - by absence of a macro-trichobothrium on the palpal tibia, absence of serrated tarsal setae, absences of posterior epigynal pockets and oval, dual-chambered spermatheca.

Description. See description of species below.

Composition. *Ibana senagang* sp. nov.

Distribution. Malaysia.

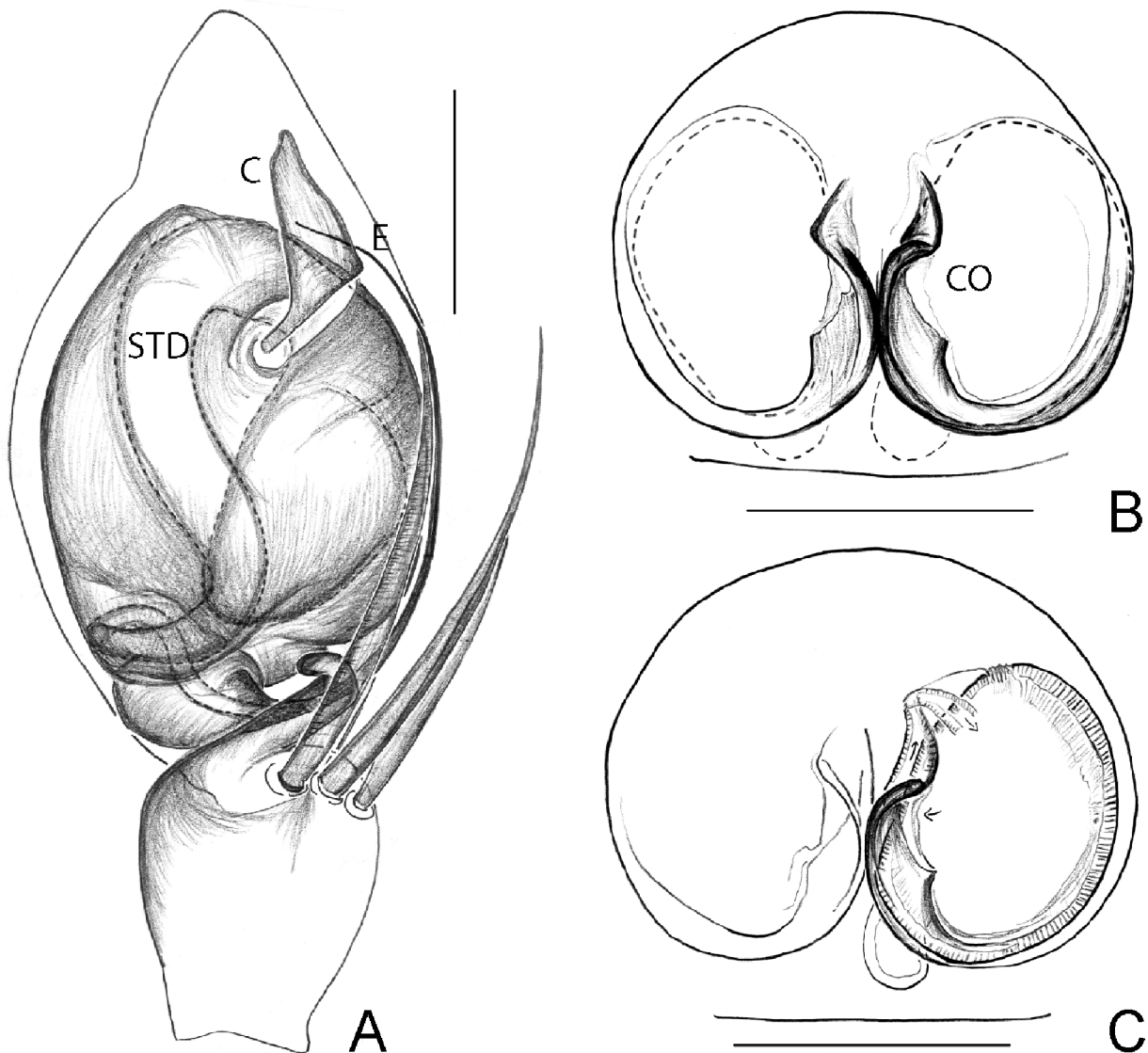


FIGURE 3. *Ibana senagang* sp. nov. A left male palp (ventral); B epigynum (ventral); D vulva (ventral). STD sperm duct; connects to embolus. Scale bars = 0.2 mm.

***Ibana senagang* sp. nov.**

Figs 1G, 3A–C

Type material: **Holotype** ♂ from **MALAYSIA: Borneo:** Crocker Range (CR) National Park, 5° 21.875' N 116° 01.582' E, Ulu Senagang, canopy fogging Dendrocnidae sp., leg. A. Floren, 17 August 2009, not well preserved, some legs missing (RMNH.ARA.15920).

Other material examined. **MALAYSIA: Borneo:** 1 ♀, West Sabah, 6°06' N 116°50' E, Sorinsim, 5 year old adjacent secondary forest, Loc 34, canopy fogging of *Melochia umbellata* (Sterculiaceae), tree 10 fog 2, A. Floren, 11 March 1997, not well preserved, some legs missing (RMNH.ARA.15910).

Etymology. The species name is a noun in apposition taken from the type locality.

Diagnosis. See diagnosis of the genus above.

Description. Male: Total length: 3.5; prosoma length: 1.7, width: 1.4. Leg I: femur 1.5, patella 0.5, tibia 1.5, metatarsus 1.4, tarsus 1.1. Leg II: femur 2.3, patella 0.6, tibia 2.4. Leg formula 2143. Coloration and markings as in Fig. 1G, prosoma, brown, no markings. Opisthosoma yellow, white patches, faded folium visible in the center (Fig. 1G). Possibly greenish in life with a colored folium. ALE > PLE > PME > AME. AER, PER recurved, eyes on mounds. Mounds not converging.

Palp as in Fig. 3A. Conductor reduced in size; less than half the size of the cymbium, sperm ducts with several turns. RTA hook-shaped, tibia furnished with 3 thick long spines. Cymbium without trichobothria.

Female: prosoma length: 1.7, width: 1.4; pisthosoma length: 1.0. Coloration and markings as in Fig. 1G. Epigynum and vulva as in Figs 3B, 3C. Spermathecae kidney shaped and with relatively longer copulatory ducts.

Distribution. Known only from the type locality.

Remarks. Males and females are grouped based on appearance and should be assessed when more material is available.

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