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## RHOPALOPSOLE MATAIKAN (PLECOPTERA: LEUCTRIDAE), A NEW STONEFLY FROM BRUNEI DARUSSALAM

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### ABSTRACT

*Rhopalopsole mataikan* sp. n., is described from a small series of adult specimens collected in Temburong District, Brunei Darussalam, on the island of Borneo. Males of the new species have a minute vesicle on abdominal sternum 9 and an asymmetrically forked posterolateral processes on abdominal tergum 10. These specimens represent the first Bornean records of Leuctridae.

**Keywords:** Plecoptera, Leuctridae, *Rhopalopsole*, Brunei Darussalam, New species

### INTRODUCTION

Harrison & Stark (2008) recently reported the first *Rhopalopsole* species from the Southeast Asian peninsula, and also provided a checklist of 29 species currently known for the genus. Several *Rhopalopsole* species are known from the Philippines and other Asian islands to the North, but no Leuctridae have been reported from Borneo. Herein, we describe a new species of Bornean *Rhopalopsole* which bears an asymmetrically forked posterolateral process on tergum 10 similar to that of *R. sinensis* (Yang & Yang 1993; Harrison & Stark 2008) and several other species. Specimens are deposited in the following museums or collections as indicated in the text: United States National Museum of Natural History, Washington (USNM); the Slovenian Museum of Natural History, Ljubljana (PMSL); B.P. Stark Collection, Clinton (BPS).

### RESULTS AND DISCUSSION

#### *Rhopalopsole mataikan* sp. n. (Figs. 1-9)

**Material studied.** Holotype ♂ from Brunei

Darussalam, Sungai Mata Ikan near Kuala Belalong Field Studies Centre, ALS B33-08, 30 June 2008, A.L. Sheldon (USNM). Paratypes: All from Brunei Darussalam: Sungai Mata Ikan near Kuala Belalong Field Studies Centre, ALS B10-08, 11 June 2008, A.L. Sheldon, 3 ♂ 1 ♀ (BPS). Sungai Mata Ikan, Ashton Trail near Kuala Belalong Field Studies Centre, ALS B3-08, 7 June 2008, A.L. Sheldon, 1 ♂ (USNM). Same location, ALS B24-08, 22 June 2008, A.L. Sheldon, 1 ♀ (USNM). Sungai Esu, upstream Kuala Belalong Field Studies Centre, ALS B31-08, 28 June 2008, A.L. Sheldon, 2 ♂, 2 ♀ (PMSL). Sungai Enkabang, ALS B35-08, 2 July 2008, A.L. Sheldon, 3 ♀ (BPS).

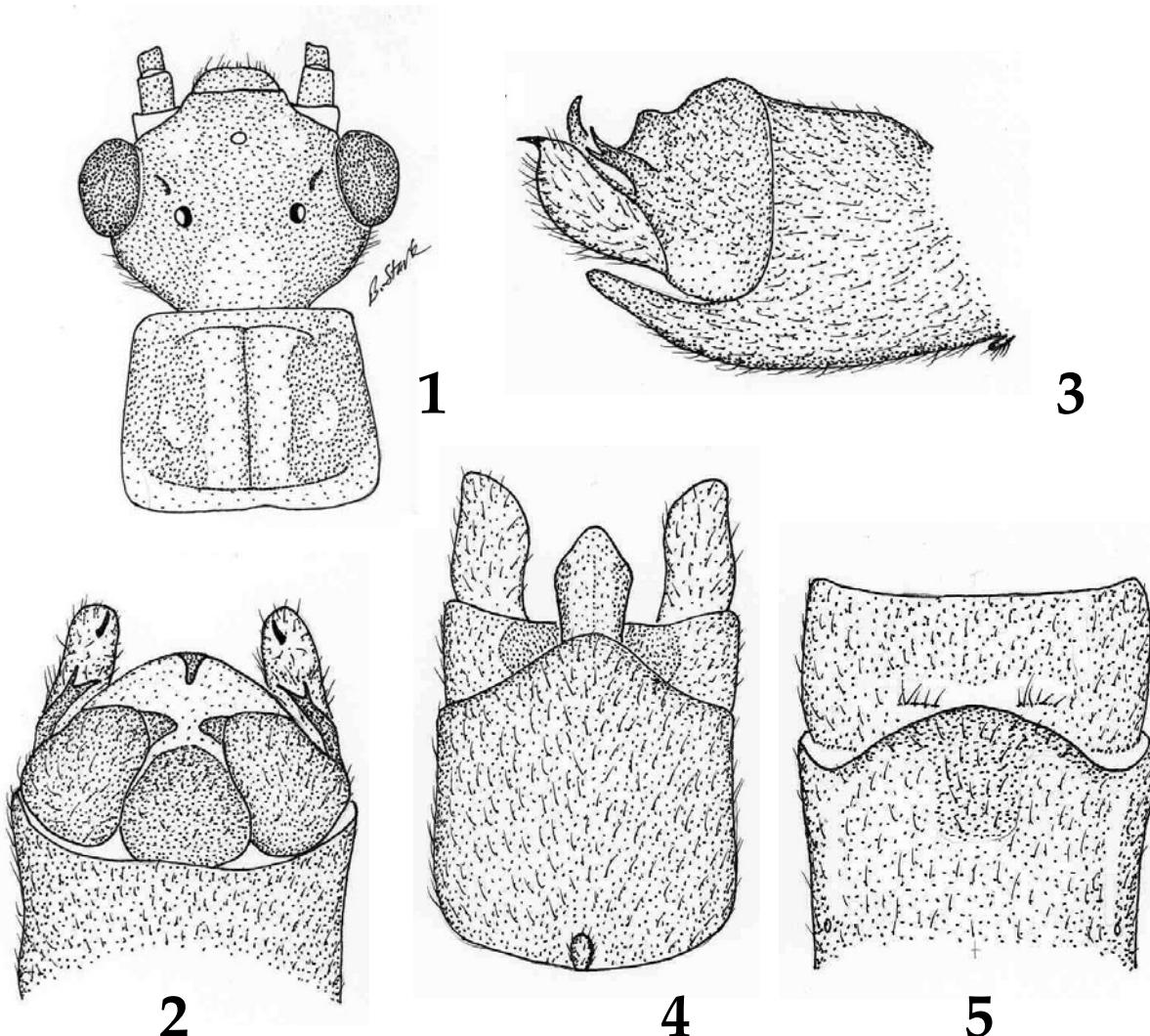
**Adult habitus.** General color brown. Head brown with scattered pale spots (Fig. 1). Pronotum with narrow, pale brown bands on either side of median suture bordered by broad pale bands. Wings pale with pale brown veins. Legs pale brown.

**Male.** Forewing length 4 mm. Lateral spines of tergum 10 forked; arms of fork slightly divergent and upper arm longer than lower (Figs. 2-3, 6-7). Epiproct slender, curved forward and apically blunt (Fig. 8), cerci with slender apical spine (Fig. 6). Vesicle minute (Fig. 4, 9).

**Female.** Forewing length 5 mm. Subgenital plate

overlaps basal third of sternum 9; posterior margin and median field of plate darker than adjacent areas

(Fig. 5). Sternum 9 with a pair of small basal ridges located near subgenital plate apex.



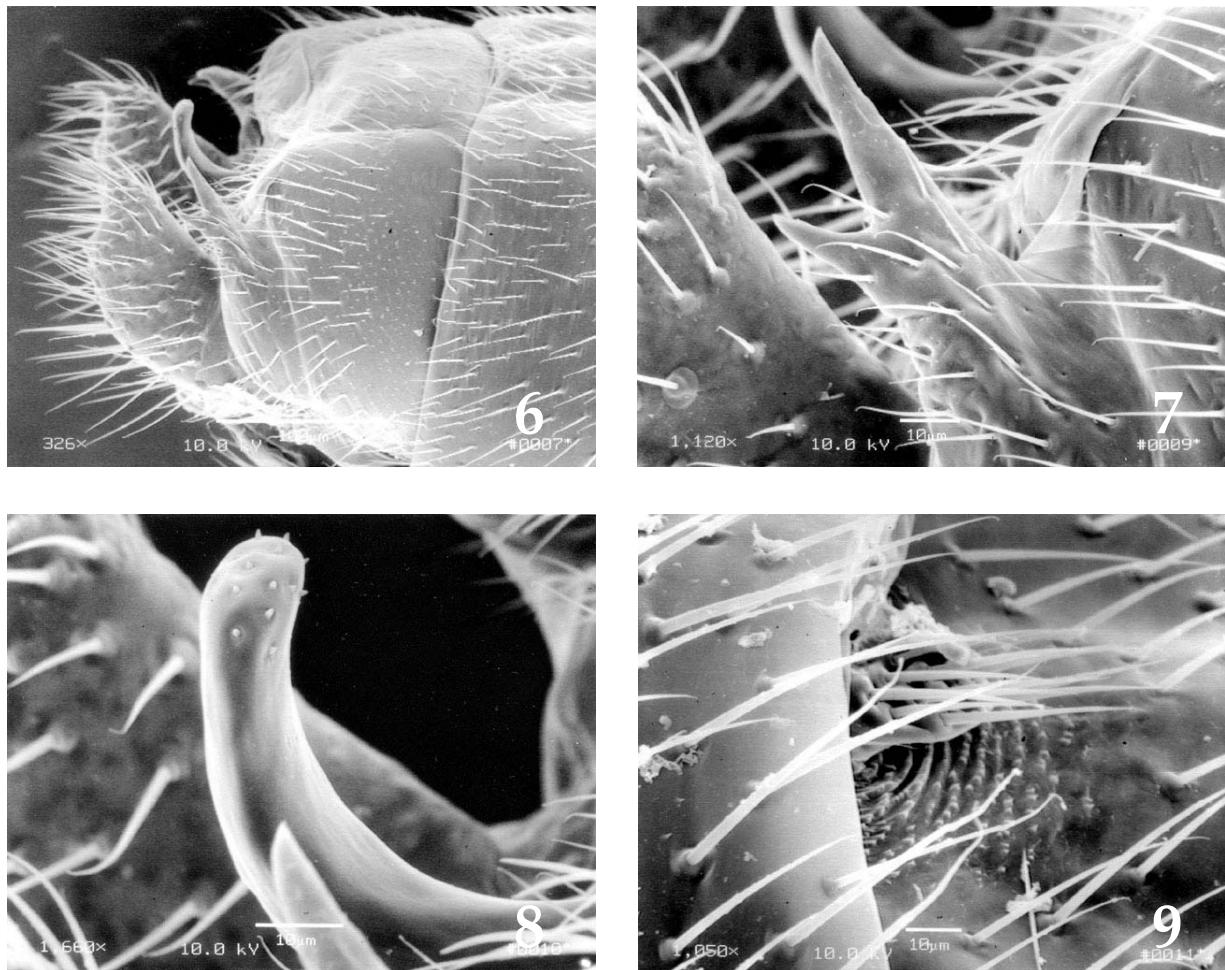
Figs. 1-5. *Rhopalopsole mataikan* adult structures. 1. Head and pronotum, 2. Male, dorsal aspect, 3. Male, lateral aspect, 4. Male, ventral aspect, 5. Female, sterna 8-9.

**Larva.** Unknown.

**Etymology.** The species name, based on the type locality, is used as a noun in apposition.

**Habitat** (based on notes provided by A. L. Sheldon). Adult *Rhopalopsole mataikan* specimens have been collected along three tributary streams (Sungai Mata Ikan, Sungai Esu, Sungai Enkabang) of Sungai Belalong near the Kuala Belalong Field Studies Centre (04.54822° N, 115.15823° E). Stream channels,

located in dense rainforest at 50-70 m asl, are 4-12 m wide during spates, but water levels recede rapidly during times of low rainfall. Reaches of moderate gradient with mixed gravel-cobble-boulder substrate are separated by numerous cascades and waterfalls. Density of *Rhopalopsole* appears to be low in these streams and considerable effort, requiring 1-2 hours with a beating sheet, was expended in the collection of each adult.



Figs. 6-9. Scanning electron micrographs of *Rhopalopsole mataikan* male structures. 6. Terminalia, dorsolateral aspect, 7. Posterolateral process of tergum 10, 8. Epiproct, lateral aspect, 9. Vesicle.

**Diagnosis.** Males of this species share a forked posterolateral process of tergum 10 with several regional species, including *R. sinensis* Yang & Yang, *R. furcata* Yang & Yang, *R. baishanzuensis* Yang & Li and *R. malayana* (Banks) (Jewett 1958; Yang & Yang 1993; Yang & Yang 1994; Yang & Li 2006). It differs from these and other known members of the genus by the very small vesicle on abdominal sternum 9. Females of few species are currently known but the subgenital plate of *R. mataikan* is distinct from that of *R. palawana* (Jewett), *R. malayana* and *R. femina* Kawai, the three species known from the Philippine Islands (Jewett 1958; Kawai 1969).

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