

***Mimadiestra sirindhornae* sp. nov. from Thailand  
(Orthoptera: Rhaphidophoridae: Aemodogryllinae)**

Pattarawich Dawwrueng<sup>1\*</sup>, Sergey Yu. Storozhenko<sup>2</sup> and Taksin Artchawakom<sup>3</sup>

<sup>1</sup> Natural History Museum, National Science Museum, Technopolis, Khlong 5, Khlong Luang, Pathum Thani, 12120 Thailand. E-mail: mapormail@hotmail.com

<sup>2</sup> Institute of Biology and Soil Science, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, 690022, Russia. E-mail: storozhenko@ibss.dvo.ru

<sup>3</sup> Sakaerat Environmental Research Station, Thailand Institute of Scientific and Technological Research, Wang Nam Khieo District, Nakhon Ratchasima Province 30370, Thailand. E-mail: sakaerat@tistr.or.th

**ABSTRACT:-** *Mimadiestra sirindhornae* sp. nov. is described from Sakaerat Environmental Research Station, Nakhon Ratchasima Province, Thailand. The new species is easily distinguished from *M. biloba* by the shape of the projection of male 7th abdominal tergite, by the shape of male paraprocts and by blackish brown body.

**KEY WORDS:** taxonomy, Thailand, Orthoptera, Rhaphidophoridae, Diestramimini, new species, Princess Maha Chakri Sirindhorn

## INTRODUCTION

Six genera and two subgenera have been described in the tribe Diestramimini of the subfamily Aemodogryllinae (Storozhenko, 1990; Gorochov and Storozhenko, 1992; Gorochov, 1998; Storozhenko and Dawwrueng, 2014; Gorochov and Storozhenko, 2015). The monotypic genus *Mimadiestra* was established for *M. biloba* Storozhenko et Dawwrueng, 2014 from Thailand (Storozhenko and Dawwrueng, 2014). During Orthopteran surveys in Sakaerat Environmental Research Station, Nakhon Ratchasima Province, Thailand, one new species of this genus was found and is described in this paper.

## MATERIALS AND METHODS

The present paper is based on specimens that were collected by hand by the first author in

2014 at the Sakaerat Environmental Research Station, Nakhon Ratchasima Province, Thailand. The survey was conducted in an evergreen forest during the dry season. The specimens were pinned and dry-preserved then deposited in the Thailand Natural History Museum (Thailand). Photographs were taken using a Canon EOS 400D with macro lens.

## Taxonomy

**Family Rhaphidophoridae Thomas, 1872**  
**Subfamily Aemodogryllinae Jacobson, 1905**  
**Tribe Diestramimini Gorochov, 1998**

**Diagnosis.** Differ from Aemodogryllini in specialized abdominal tergites and paraprocts: 7th male tergite always with posteromedial process(es), 6th tergite also one sometimes with triangular projection;

---

\*Corresponding author.

E-mail: mapormail@hotmail.com

paraprocts rather large, usually with a finger-like, spine-like or hook-like process; male genitalia membranous, usually without dorsal sclerite (epiphallus). Two of the genera, do have dorsal sclerite present, with very small sclerotized and hook-like denticles (in *Gigantettix* Gorochov, 1998) or with a smooth V-shaped sclerite (in *Megadiestramima* Storozhenko et Gorochov, 1992) very different from the analogous structure of Aemodogryllini (male genitalia in Aemodogryllini have a median semisclerotized plate usually provided with numerous small denticles) (Gorochov and Storozhenko, 2015).

**Genus *Mimadiestra* Storozhenko and Dawwrueng, 2014**

***Mimadiestra sirindhornae* sp. nov.  
(Figs 1-3)**

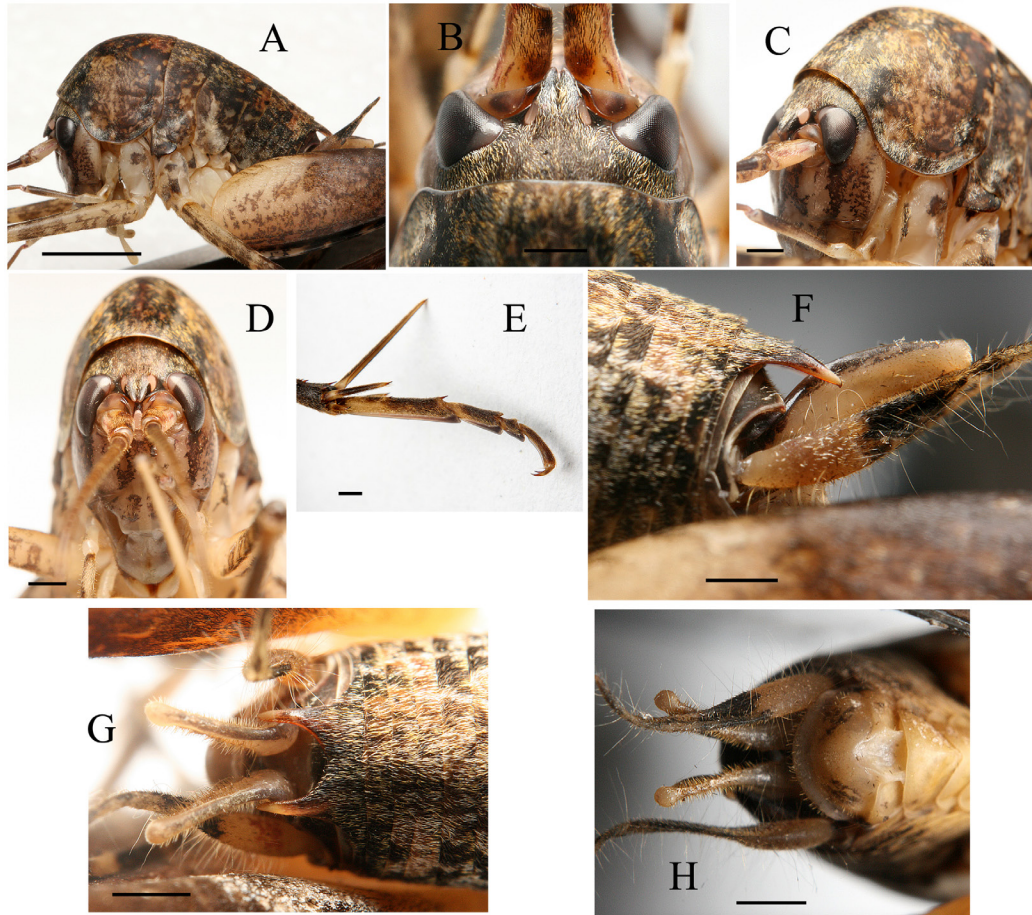
**Material.** Holotype – male, Thailand: Nakhon Ratchasima Province, Sakaerat Environmental Research Station, alongside a main road, 350-450 m, 14 September 2014, P. Dawwrueng leg. Paratype: female, same data as holotype. The types are kept in the Thailand Natural History Museum (THNHM).

**Diagnosis.** The new species is easily distinguished from *Mimadiestra biloba* by the shape of the projection of male 7th abdominal tergite, by the shape of male paraprocts and by coloration (in *M. biloba* the projection of male 7th abdominal tergite is dovetail or V-like, apex of male paraprocts bulb-like, dorsal margin of male paraprocts is not arch-like and the coloration of the body is lighter than in the new species).

**Description.** Male (holotype). Apterous. Body medium size for genus (Fig. 1A). Head with rostral tubercles relatively long, distinctly separated at apex (Figs. 1B, D). Lateral lobe of pronotum more or less semicircular in profile (Figs. 1A, C). Fore and

mid femora with only apical spines normal for this tribe (on fore femora with only inner apical spines, on mid femora with inner and outer apical spines); hind femur with 9 inner ventral denticles; fore tibia with 2 pairs of ventral spines and mid tibiae with 3 ventral spines (unpaired ventral spine is situated above the pair of ventral spines); fore and mid tibiae with 5 apical spurs each (pair of ventral spurs long, but unpaired ventral spur between them and a pair of dorsal spurs short); hind tibia with 87 outer and 93 inner dorsal denticles (division of these denticles into groups indistinct) and 6 apical spurs: outer dorsal spur reaching apical 2/3 of the first segment of hind tarsus; 2 other outer spurs short; inner dorsal spur reaching apex and inner lateral spur reaching middle of 1st segment of hind tarsus; first segment of hind tarsus with a row of 2 dorsal denticles including an apical one; second segment without dorsal apical denticle (Fig. 1E). Abdominal apex: posterior margin of male 7th tergite with 2 projections (shape U-like) (Fig. 1G); 8th and 9th tergites with straight posterior margin (Fig. 1F); 10th tergite with shallow excision (Fig. 1G); epiproct triangular. Apex of paraprocts subtruncate in lateral view (Fig. 1F), dorsal margin arched (Fig. 1G) and ventral margin straight (Fig. 1E). Male genitalia membranous.

**Colouration.** Body from above blackish brown with black and light brown spots, from below light brown (Fig. 3A). Head from above and eyes black; rostral tubercles black; face in frontal view brown with light spots; antenna bright brown. Legs blackish with light rings and spots; hind femur blackish with few light spots; apices of all femora blackish; all tibiae blackish with light spots; fore and mid tarsi blackish brown, but basal half of first segment whitish; hind tarsus with blackish brown dorsal side and whitish ventral side and the bases of 1st and 2nd segments. Pronotum blackish brown with light spots on lateral lobe. Tergite blackish



**FIGURE 1.** *Mimadiestra sirindhornae* sp. nov., male. A, body, lateral view; B, head, dorsal view; C, head, oblique view; D, head, frontal view; E, outer side of hind tarsus and apical part of hind tibia, lateral view; F, apex of abdomen, lateral view; G, the same, dorsal view; H, the same, ventral view. Scale bars: 5 mm (A), 1 mm (B–H).

with few light and brown spots. Paraproct light brown with blackish dorsal side. Cercus whitish with 2 rings, a brownish near base and a black near middle and with few blackish spots at apex.

**Female (paratype).** Similar to male (Fig. 2A), but hind femur with 7 inner ventral denticles; hind tibia with 73 outer and 75 inner dorsal denticles (division of these denticles into groups indistinct). Abdominal apex: posterior margin of female 7th tergite with small 2 projections (Fig. 2B); 8th tergite

straight and 9th tergite slightly curved near the middle (Fig. 2B). Epiproct triangular; paraprocts with small tubercles at apex (Figs. 2B). Cercus conical. Subgenital plate near the base with distinct lateral lobes, separated from plate by furrows; sub-truncate and slightly concave at apex (Fig. 2C). Ovipositor relatively long, slightly curved, lower margin of ventral valves weakly serrate at apex (Fig. 2D).

Body from above blackish brown with black and light spots, from below light



**FIGURE 2.** *Mimadiestra sirindhornae* sp. nov., female. A, body, lateral view; B, apex of abdomen, dorsal view; C, subgenital plate, ventral view; D, apex of ovipositor, lateral view. Scale bars: 5 mm (A), 1 mm (B–D).

brown (Fig. 3B). Head from above and eyes brown; rostral tubercles brown; face in frontal view brown with light spots; antennae bright brown. Legs blackish with light rings and spots; hind femur blackish with few light spots; apices of all femora blackish; all tibia blackish with light spots; fore and mid tarsi blackish brown, basal half of first segment whitish; hind tarsus with blackish brown dorsal side and whitish ventral side including bases of 1st and 2nd segments. Pronotum blackish brown with light spots on lateral lobe. Tergite blackish brown with few light and brownish spots. Epiproct light brown with distinct blackish spots. Paraproct

light brown. Cercus whitish with 2 rings, a brownish near base and a black near the middle, and with few blackish spots at apex. Ovipositor shiny brown with light brown basal part.

**Measurements. (in mm).** Length of body (from rostrum to apex of abdomen) male 14.7, female 15.8; pronotum male 5.3; female 5.0; fore femur male 10.1, female 10.0; mid femur male 9.3; female 9.4; hind femur male 25.6, female 25.2; fore tibia male 11.0, female 10.5; mid tibia male 9.1, female 8.7; hind tibia male 25.0, female 25.0; ovipositor 13.0.



**FIGURE 3.** *Mimadiestra sirindhornae* sp. nov., in-situ. A, female, lateral view; B, male, lateral view. Photographs from Mr. Noppadon Makbun.

**Distribution.** Thailand (Nakhon Ratchasima Province).

**Etymology.** The specific epithet is a patronym for Princess Maha Chakri Sirindhorn.

**Thai Name.** Takkatan Kuharat (ตั๊กแตนคูหารัตน์), name given by Her Royal Highness Princess Sirindhorn.

**Habitats.** The new species was collected at 350-450m altitude from leaves of a bush about 20-40 cm above ground.

### ACKNOWLEDGEMENTS

We thank Dr. Akekawat Vitheepradit (Department of Entomology, Faculty of Agriculture, Kasetsart University, Thailand), Dr. Weeyawat Jaitrong (Natural History Museum, National Science Museum, Thailand), Assist. Prof. Nantasak Pinkaew (Department of Entomology, Faculty of Agriculture at Kampaengsaen, Kasetsart University, Kampaengsaen Campus, Thailand) and Miss Thansuda Dowwiangkan for their support. We are grateful to Mr. Noppadon Makbun for providing the photo of the new species. Thanks also given to anonymous reviewers whose modifications increased quality of the paper. The present investigation was partly supported by grants of the Russian Foundation for Basic Research No 14-04-00649 and by the President Grant

for Government Support of the Leading Scientific Schools of the Russian Federation (No HIII-150.2014.4).

### REFERENCES

- Gorochoy, A.V. 1998. Material on the fauna and systematics of Stenopelmatoidea (Orthoptera) from Indochina and some other territories I. *Entomologicheskoe Obozrenie* 77(1): 73–105. (In Russian)
- Gorochoy, A.V. and S.Yu Storozhenko. 1992. On the fauna of the subfamily Aemodogryllinae (Orthoptera, Rhaphidophoridae) in Vietnam. *Trudy Zoologicheskogo Instituta RAN* 245: 17–34. (In Russian)
- Gorochoy, A.V. and S.Yu Storozhenko. 2015. New and little-known taxa of the tribe Diestramimini (Orthoptera: Rhaphidophoridae: Aemodogryllinae) from Southeast Asia. Part 1. *Zoosystematica Rossica* 24 (1): 48–84.
- Storozhenko, S.Yu. 1990. Review of the orthopteran subfamily Aemodogryllinae (Orthoptera, Rhaphidophoridae). *Entomologicheskoe Obozrenie* 69(4): 835–849. (In Russian)
- Storozhenko, S.Yu. and P. Dawwrueng. 2014. New genus of the tribe Diestramimini (Orthoptera: Rhaphidophoridae) from Thailand. *Zootaxa* 3765 (3): 288–294.

---

Received: 15 June 2016

Accepted: 23 July 2016