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Short Notes

First Record of the Female of the Praying Mantis *Mythomantis serrata* (Order: Mantodea) from Sabah, Borneo

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Abstract

We present the first record of the female of *Mythomantis serrata,* collected from Imbak Canyon Conservation Area, Sabah. This species was described by Schwarz & Helmkampf in 2014 based on male specimens collected from Gunung Mulu, Sarawak and Danum Valley, Sabah, Borneo. This species can be distinguished from the other *Mythomantis* species, *M. confusa* and *M. gracilis*, based on the presence of sawtooth-like lobes along the sides of the pronotum, and the concave margins of its supra-anal plate. The female individual of this species possesses similar morphological characters like those seen in males. The description of the female specimen follows Schwarz & Helmkampf (2014).

Keywords: Mantodea, *Mythomantis serrata*, female, Borneo, taxonomy

Introduction

The praying mantis genus *Mythomantis* was first described by Giglio-Tos in 1916 and currently comprise three Sunda species, namely *M. confusa* (Westwood, 1889), *M. gracilis* Werner, 1922 and a recently described species, *M. serrata* Schwarz & Helmkampf, 2014. To date, both sexes are only known in *M. confusa*. *M. gracilis* and *M. serrata* have been described based on male specimens with no information on their females. *M. serrata* was described based on a series of male specimens collected in Gunung Mulu, Sarawak and Danum Valley, Sabah, Borneo, the description is based on these additional specimens. These specimens are deposited in collections such as the Natural History Museum, London (NHM), the Muséum National d'Histoire Naturelle, Paris (MNHN), the Cleveland Museum of Natural History (CMNH), and the Sarawak Museum of Natural History (SMNH).

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M. serrata can be easily distinguished from the other two species based on its prominent triangular lobes along its pronotal sides (Figure 1C), and the concave margins of its supra-anal plate (Figure 1B). Additionally, its body length exceeds those of *M. confusa* and *M. gracilis*. This paper reports on the first female of *M. serrata* collected from Imbak Canyon Conservation Area, Sabah.

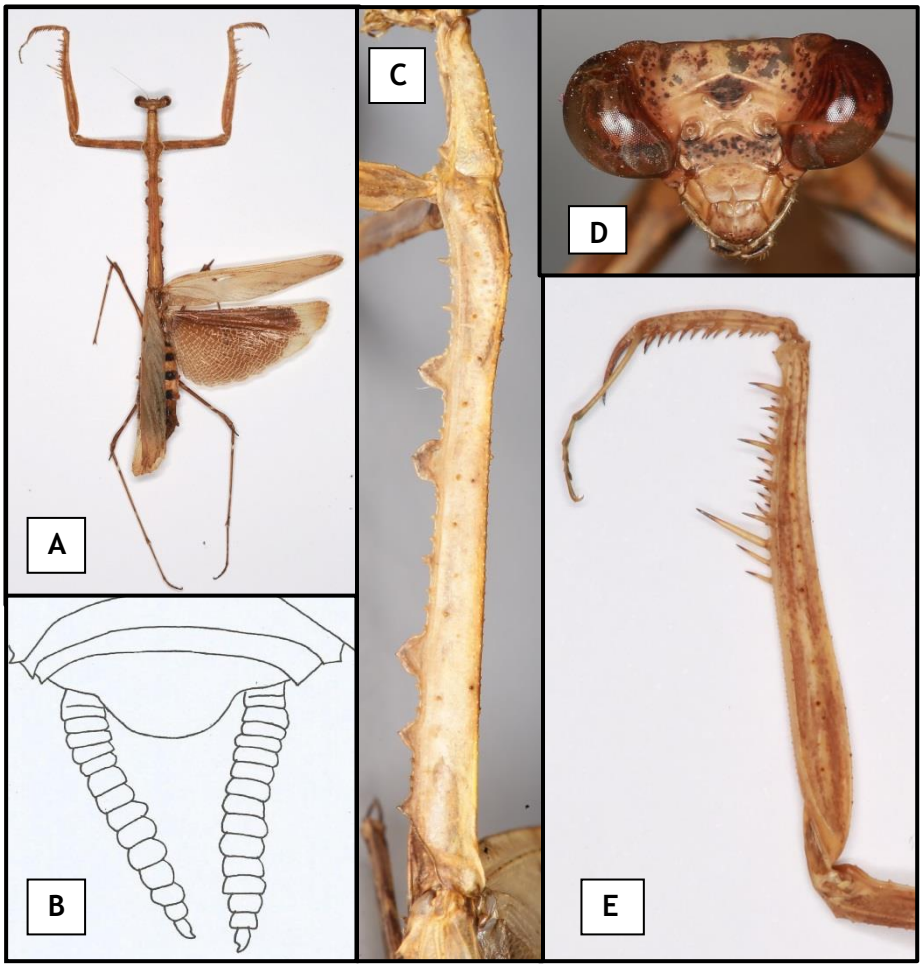

Figure 1. *Mythomantis serrata*, ♀. **A.** Habitus, dorsal view. **B.** Illustration of supra-anal plate with cerci, dorsal view. **C.** Pronotum, lateral view **D.** Head, anterior view. **E.** Left fore femur and tibia, posterior view.

Materials and Methods

A single female specimen of *M. serrata* (Figure 1A) has been collected from Mount Kuli Research Centre located within the Imbak Canyon Conservation Area (ICCA), Sandakan, Sabah (Figure 2). ICCA is a Class 1 protected lowland dipterocarp forest that consists of approximately 30,000 ha of conserved forest, including two nearby Virgin Jungle Reserves. Mount Kuli is the lower montane section of the conservation area.

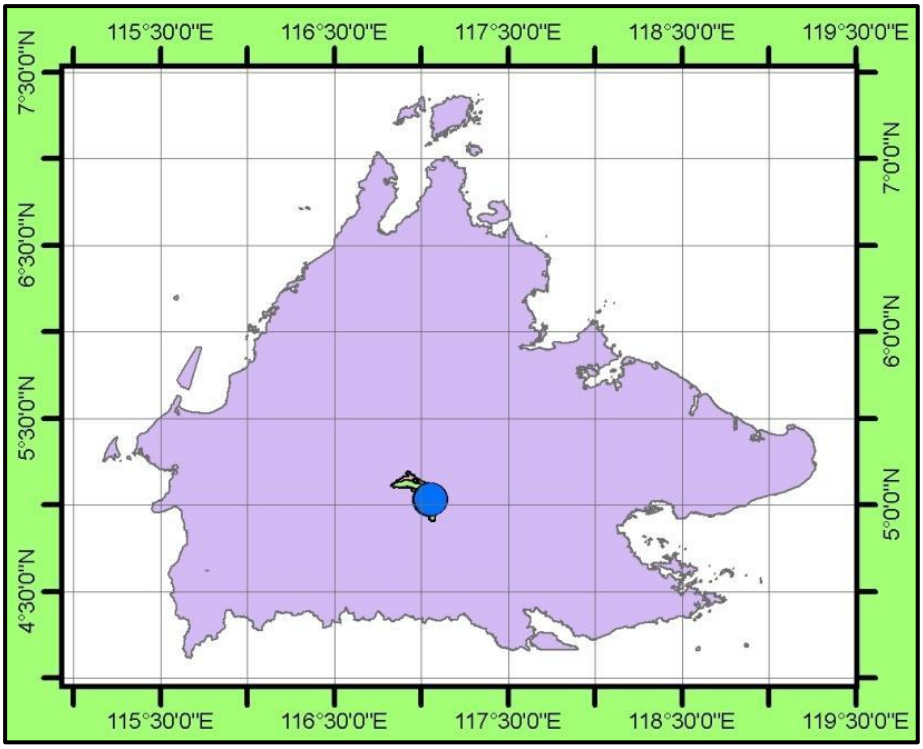

Figure 2. Map of Sabah showing the location of Imbak Canyon Conservation Area (ICCA).Source: Nurain (2012)

This specimen was collected during a short term study of praying mantis diversity ICCA (conducted by the corresponding author), where the sampling was carried out for three weeks (between January and February 2012). The specimen was caught by using a light-trap consisting of a white linen sheet and a bulb powered by a portable petrol generator which was set up at an understorey of the forest. The trapping was conducted between 6:30pm to 12:00am. The female *M. serrata* specimen is deposited in BORNEENSIS, a

collection centre at the Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah.

Figure 3. Light-trap was set-up in the sampling site.Source: Nurain (2012)

Results

Abbreviation

BORNEENSIS Insect Collection, Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah - BOR.

Material examined

♀, Sabah, Imbak Canyon Conservation Area, 28.i.2012. Light Trap, Nurain Musi (BOR).

Description (after Schwarz & Helmkampf 2014)

***Female*.** Length of body 70mm, head 5mm, pronotum 35mm, forewing 36mm, hindwing 31mm, width of head 6.5mm, pronotum 2mm.

Head as in males (Figure 1D); ocelli smaller than in males; antennae shorter than in males but similar in colour; palpi as in males. Pronotum features as in males except the lateral margins of metazone with 5 large, triangular, sawtooth-like lobes interspersed with smaller teeth (Figure 1C). Prosternum as in males.

Forecoxae 15mm long with 5 teeth along anterior margin and the colour as in males; forefemora measurement 20mm in length, with the same features as found in males (only 4 posteroventral spines on the left side and 5 posteroventral spines on the right side of this specimen); foretibiae 8 mm long, with 5 posteroventral and 13 anteroventral spines (Figure 1E).
Middle and hind legs have similar colour as males. Middle and hind femur measurement 15 mm and 17 mm long respectively, with the same features found in males. Middle tibia is about the same length as femur. Hind tibia measurement is 20 mm long, which is longer than the corresponding femur.

Forewing has the same pattern as found in males. Supra-anal plate is similar to males (Figure 1B). Ovipositor short, but its tips protruding from the genital chamber.

Discussion

The island of Borneo is well known as one of the world's biodiversity hotspots (Struebig et al., 2015). Borneo is reported as an area with the highest number of mantid species so far with 118 species and 56 genera (Schwarz & Konopik, 2014). New species of praying mantis are discovered from time to time in the course of studies conducted on various aspects of praying mantid biology, including their biodiversity and taxonomy.

Mythomantis serrata is rarely found and assumed to be confined to mature dipterocarp forest. This information is in agreement with the collection of the female specimen, which had been sampled from the dipterocarp forest in Imbak Canyon Conservation Area (ICCA), Sabah. Morphological examination revealed that sexual dimorphism is not very accentuated in the genus *Mythomantis*. Apart from differences in the external reproductive organs, body size dimorphism is very apparent in this species, with body, pronotum, legs and abdomen being generally longer in females than in males, except the wings which are comparatively shorter among females when compared to males.

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