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A new species of *Phasmotaenia* Navas (Phasmida: Phasmatidae) from Taiwan

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Abstract

*Phasmotaenia lanyuhensis* sp. nov. is described from four female and three male specimens collected in Lanyuh Island (south-east Taiwan). This species is characterized from others in the genus by its shorter hind wings, and shorter length of operculum. A key to females of the genus is provided; males have not previously been recorded. Adults and eggs are described and figured.

Key words


Introduction

The phasmid fauna of Taiwan was part of a comprehensive study by Shiraki (1935), who listed or described 25 species. Little work has been done on the fauna since. The present study deals with a new species in the genus *Phasmotaenia* Navas, 1907 (Phasmidae, subfamily Phasmatinae, tribe Pharnaciini) known by two species recorded from the Philippines.

Three mating pairs of an undescribed *Phasmotaenia* species were obtained during a collecting trip to Hungtou Village, Lanyuh Island, the first record of males in the genus. Eggs were laid by captive females.

This new species is commonly found in the forest area in the island, hanging underneath branches in the daytime. They roam around the food plant about 1 h before sunrise and mostly at a height of less than 10 m. In rare instances, they may be found in other areas such as the shore.

The type series has been deposited in the National Taiwan University, Taipei, Taiwan (NTUC), which also houses Shiraki’s type material and collection (formerly in the Government Research Institute, Taihoku, Taiwan), and in the Natural History Museum, London, UK (BMNH).

Key to adult females of *Phasmotaenia*

1. Operculum elongate, extending beyond abdomen by 3-6 x length of anal segment. Hindwings short (10-12 mm), rounded. Distribution: Philippines ...................... 2 — Operculum shorter, extending beyond abdomen by 2 x length of anal segment. Hindwings shorter (5-6 mm), not quite rounded. Distribution: Taiwan ......................... ............................. "P. lanyuhensis" sp. nov.

2. Elongate, slender species. Mesonotum hardly broadened .................................. *P. elongata* Zompro & Eusebio 2000 — Broader, more robust species with mesonotum conspicuously broadened ...... *P. sanchezi* (Bolivar 1897)

Note: The male is only known in the new species, hence no key to adult males is provided.

*Phasmotaenia* Navas 1907

*Phasmotaenia* Navas, 1907: 10. Replacement name for *Taeniosoma* Bolivar 1897: 30 (a primary junior homonym).

Type species.— *Taeniosoma sanchezi* Bolivar, 1897: 31, by monotypy.

*Taenionema* Bolivar 1906: 393 (replacement for *Taeniosoma*; but invalid as also a primary junior homonym).

*Taeniophasma* Uvarov 1940: 379 (unnecessary replacement name for *Taenionema*, which had already been replaced by *Phasmotaenia*).

Since Bolivar (1897) described his new species *Taeniosoma sanchezi* there have been few observations on the genus, other than changes to the generic name, due to the use of preoccupied names. This has caused some confusion in the literature, added to by spelling errors, including *Phasmotaeniomema* used by Günther (1933), when describing a new species (which was later transferred to a different genus) and Bradley & Galil (1977), who cited *Phasmatotenionema*. Vanschuytbroeck & Cools (1981) clarified the correct generic name. The most recent publication on the genus is by Zompro & Eusebio (2000).

Description.— Females of *Phasmotaenia* (adapted from Bolivar 1897): large, elongate. Head unarmed, posterior disproportionately narrow. Antennae shorter than fore femora, with approximately 30 segments. Second segment short. Mesonotum unarmed, broadened in middle. Metanotum and median segment combined, three times longer than pronotum. Forewings absent in type species (or tiny); hindwings very shortened. Abdomen long and slender, with final three segments shortened. End of anal segment rounded laterally. Cerci short. Operculum long, extending well be-
yond end of anal segment; filiform valves conspicuous. Femora and tibiae long, dentate. Mid and hind tibiae may have sub-basal lobe.

**Males of Phasmotaenia** (based on the only male known): similar to females, except as follows: thorax elongate, not broadened. End of anal segment slightly triangular incised. Subgenital plate broad, rounded at tip, which has large central incision.

**Phasmotaenia lanyuhensis** sp. nov.  
(Figs 1-10)

**Description.**— **Female** (holotype) (Figs 1-4): robust brown smooth insect with some dark brown motting. Fore wings tiny and pale brown; pre-anal part of hind wings rust, hind wings black. Body length 162 mm.


Thorax: smooth, brown color with some darker motting. Pronotum shorter than head; conspicuous median depression and a pair of light lunate areolets on posterior half. Mesonotum over 4 x length of pronotum; dilated, more conspicuously when alive. Metanotum much shorter than mesonotum; longer than broad and about 3 x length of pronotum.

Abdomen: smooth, long and dark brown. Anal segment as long as the 9th segment and about two-thirds as long as thorax. First segment fused with metanotum. Anal segment short, end slightly triangular incised.

**Abdomen:** smooth, long and dark brown; slightly narrower than thorax. First segment fused with metanotum. Anal segment as long as the 9th segment and about two-thirds as long as thorax. First segment fused with metanotum. Anal segment short, end slightly triangular incised. Subgenital plate broad, rounded at tip which has large central incision.

Wings: forewings tiny or absent. Hindwings small rust colored.

Legs: long, slender and with numerous tiny teethlike serrations. Rust-brown color; sometimes with black apices on all femora and tibiae. All femora with pair of apical spines.

Egg (Figs 9, 10): capitulum smooth, brown, closed conical shape. Collar dark grey. Capsule smooth glossy and oval; ivory with dark-grey motting. Capsule length 4 mm, height 2.8 mm, width 2.5 mm. Micropylar plate ivory, elongate, length 3 mm, width 1 mm, broadened around micropylar cup. Micropylar cup dark grey.

**Note:** The micropylar plate is much more elongate than that of *P. elongata*, the only egg previously known in the genus.

**Table 1. Measurements (mm).**

<table>
<thead>
<tr>
<th></th>
<th>♂</th>
<th>♀</th>
<th>♀ (Holotype)</th>
<th>♀ (Paratypes)</th>
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<tr>
<td>Body length</td>
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<td>162</td>
<td>158</td>
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<tr>
<td>Head</td>
<td>5-6</td>
<td>11</td>
<td>10-11</td>
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<tr>
<td>Antennae</td>
<td>27-30</td>
<td>25</td>
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<td>4-5</td>
<td>8.0</td>
<td>6-8</td>
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<tr>
<td>Mesonotum</td>
<td>22.5-25</td>
<td>33</td>
<td>31-34</td>
<td></td>
</tr>
<tr>
<td>Metanotum</td>
<td>7-8</td>
<td>8.5</td>
<td>8-8.5</td>
<td></td>
</tr>
<tr>
<td>Median seg.</td>
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<td>9.5</td>
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<tr>
<td>Fore wings</td>
<td>0.8-1</td>
<td>1.2</td>
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<tr>
<td>Hind wings</td>
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<td>5.8</td>
<td>5-6.2</td>
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<td>Fore femora</td>
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<tr>
<td>Mid femora</td>
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<tr>
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<tr>
<td>Cerci</td>
<td>1.5</td>
<td>1.0</td>
<td>1-2</td>
<td></td>
</tr>
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</table>

**Holotype female:** Hungtou, Lanyuh Island, Taitung Hsien, Taiwan, 23.vi.2000, Yamai Shi-Fu Huang, in National Taiwan University, Taipei (NTUC).

**Paratypes:** 3 ♂ ♂, 3 ♀ ♀, same data as for holotype, deposited as follows: 2 ♂ ♂, 2 ♀ ♀ in National Taiwan University, Taipei (NTUC). ♂ ♂, ♀ ♀ in Natural History Museum, London (BMNH).

**Distribution.**— Very common on Lanyuh Island, particularly around Hungtou Village.

**Etymology.**— Named after Lanyuh Island (Taitung Hsien, south-east Taiwan).
Foodplants.— This new species can be found on *Bischoffia javanica* Blume (Euphorbiaceae) (Fig. 11) around the island. However, they readily accept *Turpinia formosana* Nakai (Staphyleaceae) in captivity.

Acknowledgments

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Shiraki T. 1935. Orthoptera of the Japanese Empire (Part IV) Phasmidae. Memoires of the Faculty of Science and Agriculture, Taihoku Imperial University, Formosa, Japan 14: 61-88.

Fig. 11. Bischofia javanica twig.