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

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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

Phasmatidae, *Phasmotaenia*, new species, Lanyuh, Taiwan.

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 (Phasmatidae, 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 *Phasmotaenionema* 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 mottling. Fore wings tiny and pale brown; pre-anal part of hind wings rust, hind wings black. Body length 162 mm.
Head: smooth, much longer than broad, brown with darker mottling. Eyes small. Antennae brown with 23 segments; shorter than fore femora. Basal segment and 3rd segment long.
Thorax: smooth, brown color with some darker mottling. 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; slightly narrower than thorax. First segment fused with metanotum. Anal segment as long as the 9th segment and about two-thirds as long as 8th segment. Last three segments much shorter than previous segments. End of anal segment rounded. Cerci short, pointed at tip. Operculum extending beyond abdomen by twice length of anal segment; tapered to a pointed tip. Valves also extending well beyond anal segment, but not reaching tip of operculum.
Wings: fore wings tiny, pale brown. Hindwings short. Pre-anal part of hind wings rust colored; hind wings black.
Legs: long and slender, with numerous small serrations and with more than four broad dark brown bands on all femora; also two bands present on mid tibiae. All femora with pair of apical spines.

Paratype **females:** (3 specimens). Same as holotype except in size and color variation, being pale brown to green; sometimes lacking banding on legs. Color of wings as in holotype.

Paratype **males** (Figs 5-8): (3 specimens). Slender, smooth brown insect. Legs pale rust colored. Forewings tiny. Hindwings small and rust colored. Body length 114-117 mm.
Head: smooth, much longer than broad, dark straw color. Back of head with darker median line and two shortened lines either side. Antennae brown with 23 segments; shorter than length of fore femora.
Thorax: smooth, rust-brown color. Pronotum nearly as long as head, with a "V" shape transversal median sulcus. Mesonotum about 5 x length of pronotum. Metanotum shorter than mesonotum.
Abdomen: smooth, long and dark brown. Anal segment short, end slightly triangular incised. Cerci long, tip rounded. Subgenital plate broad, rounded at tip which has large central incision; reaching end of 9th abdominal segment.
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 mottling. 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).

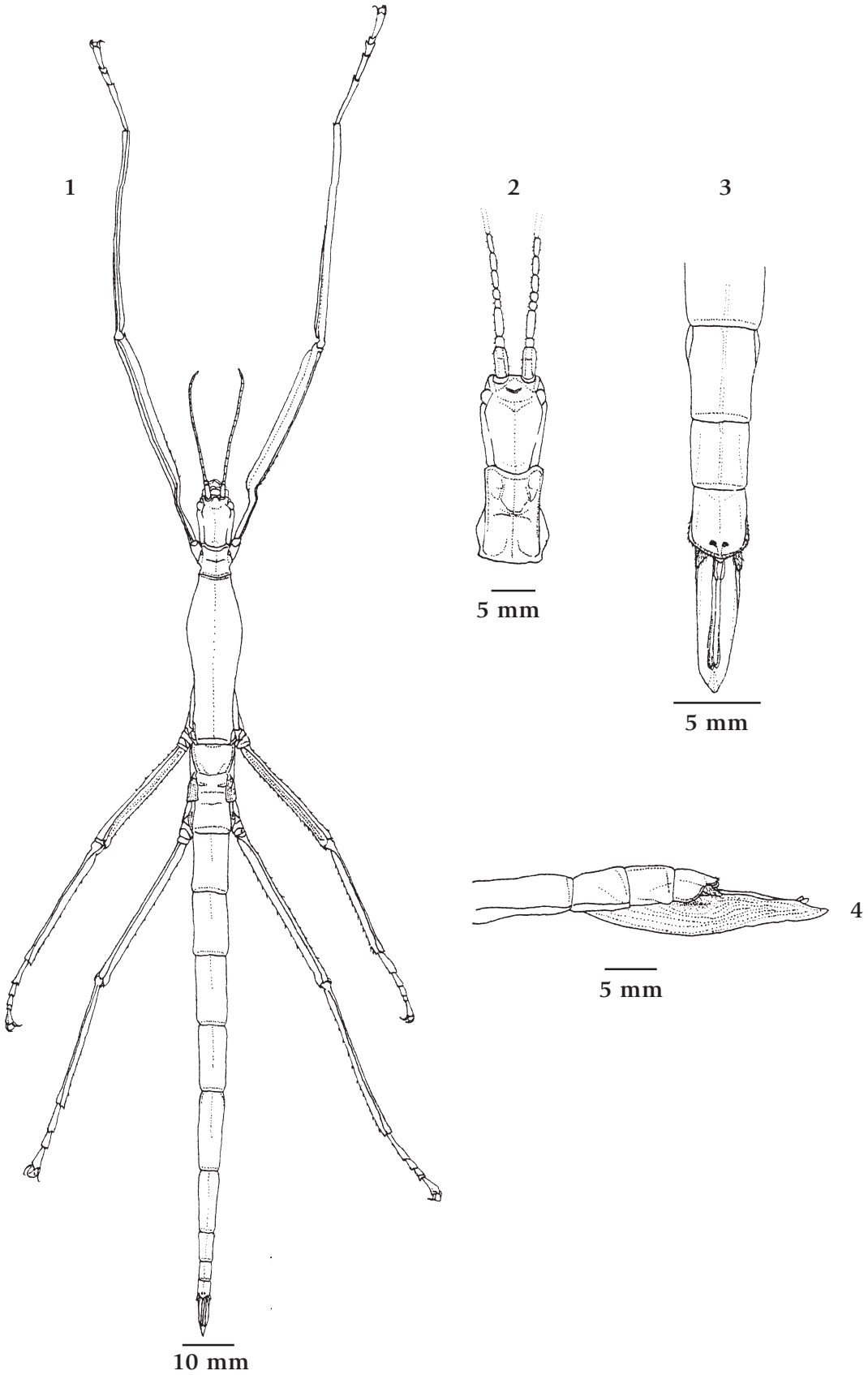
	♂	♀ (Holotype)	♀ (Paratypes)
Body length	114-117	162	158
Head	5-6	11	10-11
Antennae	27-30	25	25-27
Pronotum	4-5	8.0	6-8
Mesonotum	22.5-25	33	31-34
Metanotum	7-8	8.5	8-8.5
Median seg.	6.5	9.5	9-9.5
Fore wings	0.8-1	1.2	1-1.5
Hind wings	0.8-1.5	5.8	5-6.2
Fore femora	38-42	47.0	43-47
Mid femora	27-30	30.0	30-34
Hind femora	31-35	34.0	34-39
Fore tibiae	35-44	45.0	45-48
Mid tibiae	25-27	28.0	28-32
Hind tibiae	33-35	33.0	33-37
Cerci	1.5	1.0	1-2

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

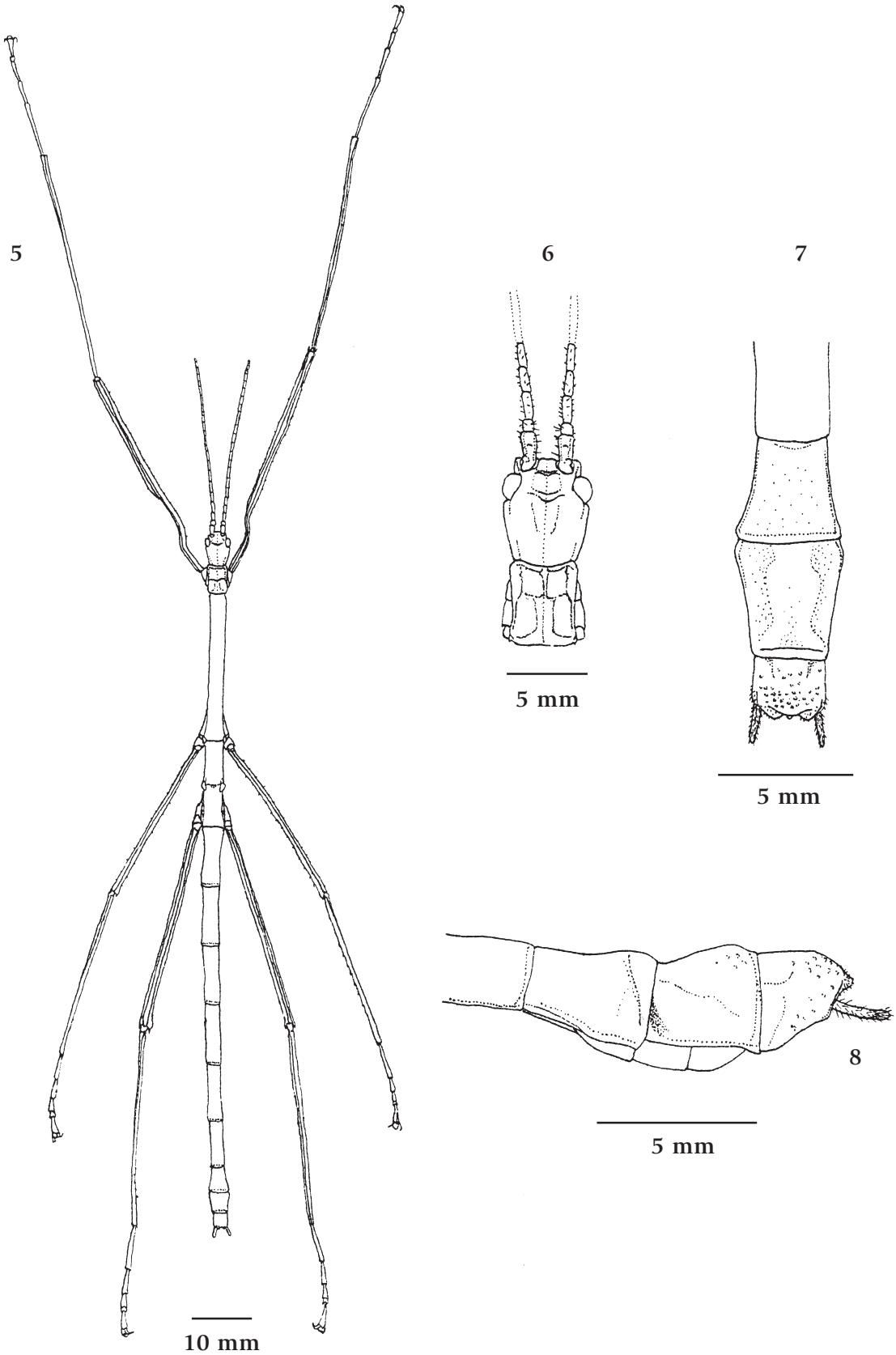
Paratypes**:** 3 ♂♂, 3 ♀♀, same data as for holotype, deposited as follows: 2 ♂♂, 2 ♀♀ in National Taiwan University, Taipei (NTUC). ♂, ♀ in Natural History Museum, London (BMNH).

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

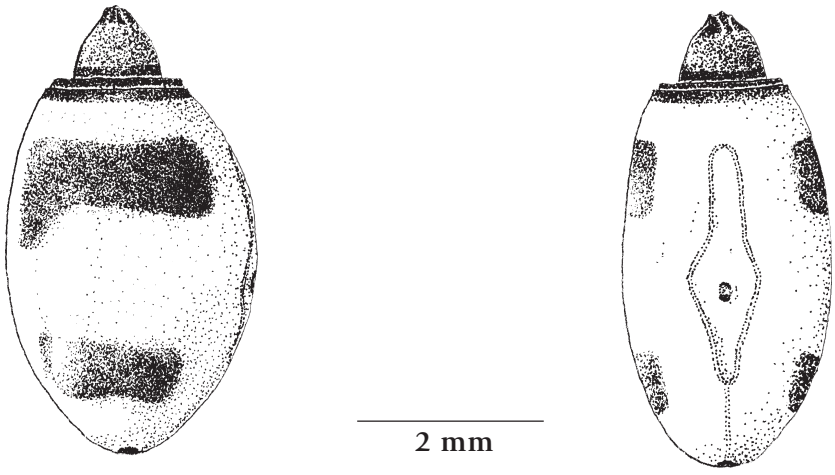
Etymology.— Named after Lanyuh Island (Taitung Hsien, south-east Taiwan).



Figs 1-4. Holotype ♀. **1.** Dorsal view. **2.** Head and pronotum. **3.** End of abdomen – dorsal view. **4.** End of abdomen – lateral view.



Figs 5-8. Paratype ♂. **5.** Dorsal view. **6.** Head and pronotum. **7.** End of abdomen – dorsal view. **8.** End of abdomen – lateral view.



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Figs 9-10. Egg capsule. **9.** Lateral view. **10.** Dorsal view.

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.

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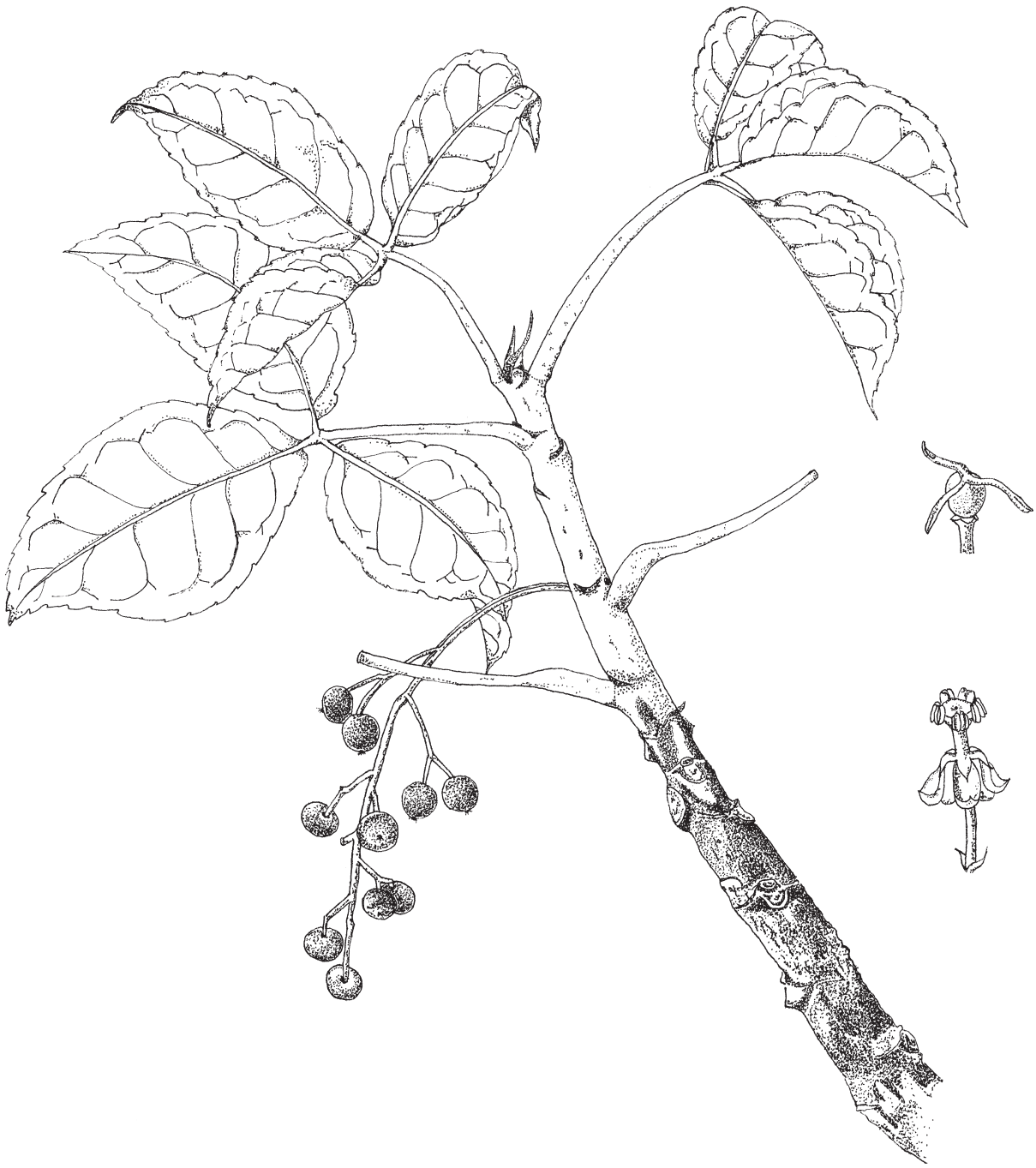

Fig. 11. *Bischoffia javanica* twig .