

**NEW RECORDS OF STICK INSECTS FROM PULAU TIOMAN,
PENINSULAR MALAYSIA, INCLUDING DESCRIPTION OF
A NEW SPECIES OF *ABROSOMA*
(PHASMIDA: PSEUDOPHASMITIDAE: ASCHIPHASMATINAE)**

F. Seow-Choen

Department of Colorectal Surgery, Singapore General Hospital, Outram Road, Singapore 169608

Y.Y. Goh

Department of Biological Sciences, National University of Singapore, Kent Ridge Road, Singapore 119260

ABSTRACT. - The phasmid fauna of Pulau Tioman is described. Fifteen species are recorded, including *Abrosoma johorensis*, new species.

KEY WORDS. - Phasmida, Pulau Tioman, Peninsular Malaysia, *Abrosoma*, new species.

INTRODUCTION

The taxonomy and distribution of phasmids in Peninsular Malaysia and Singapore have been largely ignored. Recent studies (Seow-Choen et al., 1994; Brock, 1995; Seow-Choen, 1997) have paved the way for further research on the phasmids of this region. There has been no report as yet on phasmids in Pulau Tioman although several expeditions have been conducted to survey the island biota (Bullock, 1966; Lee et al., 1977; Day & Mowbray, 1990). The rapid development of the island as a tourist resort makes the study of phasmids in Pulau Tioman an urgent one.

MATERIALS AND METHODS

Staff of the National University of Singapore collected phasmids in Pulau Tioman from the 26-28 June 1996. F. Seow-Choen et al. collected phasmids from the 5-6 June 1997. Phasmids were found by searching vegetation along forest trails with a hand held torch at night.

Specimens were identified by the first author by comparing captured insects with those in his collection which had been identified previously by comparison with type specimens in various museums. The names and taxonomic classification used follow those of Brock (1995, 1996). The specimens are deposited in the private collection of the senior author (FSC), in the Zoological Reference Collection (ZRC), Raffles Museum, National University of Singapore, in the Insection Collection at the Forest Research Institute of Malaysia (FRIM) Kepong and the Pusat Systimetik Serangga, Bangi (PSS), both in West Malaysia.

TAXONOMY

SUBORDER ANAREOLATAE FAMILY HETERONEMIIDAE SUBFAMILY NECROSCIINAE

Asceles malacca (Sausure, 1868)

2 nymphs, behind Berjaya Hotel, coll. F. Seow-Choen, 5 Jun.1997 (ZRC).

Baculofractum insignis (Brunner von Wattenwyl, 1907)

1 female penultimate-nymph, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 6 Jun.1997 (FSC).

Calvisia coerulescens Redtenbacher, 1908

1 female, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 6 Jun.1997 (FSC).

Gargantuoidea triumphalis Redtenbacher, 1908

1 nymph (observed), behind Berjaya Hotel, det. F. Seow-Choen, 5 Jun.1997.

Lopaphus iolas (Westwood, 1859)

1 male, 3300 ft, Gunung Kajang, coll. Y.Y. Goh, 27 Jun.1996 (ZRC).

Marmessoidea rosea (Fabricius, 1793)

1 male, 2500 ft, Gunung Kajang, from Paya-Kajang Path, coll. A.T. Bai, 28 Jun.1996 (ZRC).

Necroscia punctata (Gray, 1835)

1 male, behind Berjaya Hotel, coll. F. Seow-Choen, 5 Jun.1997 (ZRC).

SUBFAMILY LONCHODINAE

Lonchodes brevipes Gray, 1835

1 male, Tekek-Juara Trail, coll. F. Seow-Choen et al., 6 Jun.1997 (ZRC).

Lonchodes geniculatus (Gray, 1835)

1 male nymph, 1 female, 3300 ft, Gunung Kajang, coll. T.C.M. Wong, Y.Y. Goh, 27 Jun. 1996 (ZRC).

—1 male, 1 female penultimate nymph, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 7 Jun.1997 (ZRC).

***Prisomera malaya* (Stol, 1875)**

1 male, Paya, coll. C.M. Yang, 26 Jun. 1996 (ZRC). — 1 female, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 7 Jun.1997 (ZRC).

***Prisomera repudiosa* (Brunner von Wattenwyl, 1907)**

3 females, 4 males, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 6 Jun.1997 (ZRC). — 1 male, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 6 Jun.1997 (FSC).

FAMILY PHASMATIDAE
SUBFAMILY PHASMATINAE

***Baculum nematodes* (de Haan, 1842)**

1 male, 1500 ft, Gunung Kajang, from Paya-Kajang Path, coll. T.C.M. Wong, 26 Jun.1996 (ZRC). — 1 nymph (observed), behind Berjaya Hotel, det. F Seow-Choen, 5 Jun.1997.

***Phobaeticus serratipes* (Gray, 1835)**

1 male, 1500 ft, Gunung Kajang, from Paya-Kajang Path, coll. Y.Y. Goh, 26 Jun.1996 (ZRC). — 1 nymph, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 6 Jun.1997 (FSC).

SUBORDER AREOLATAE
FAMILY BACILLIDAE
SUBFAMILY HETEROPTERYGINAE

***Datames oileus* (Westwood, 1859)**

1 female, Tekek-Juara trail, coll. Y.Y. Goh, 26 Jun.1996 (ZRC). — 1 female, Tekek-Juara Trail, coll. F Seow-Choen, CS Siow, I Seow-En, 6 Jun.1997 (ZRC).

FAMILY PSEUDOPHASMATIDAE
SUBFAMILY PSEUDOPHASMATINAE

***Abrosoma johorensis*, new species**

(Figs. 3-4)

Material examined. - Holotype male (34mm) Kota Tinggi Recreation Forest, Johor, coll. F. Seow-Choen, 10 Jun.1997 (FSC).

Paratypes - 1 male nymph, behind Berjaya Hotel, Pulau Tioman, coll. F Seow-Choen, CS Siow, I Seow-En, 5 Jun.1997 (ZRC). — 1 mating pair, Tekek-Juara Trail, Pulau Tioman, coll. F. Seow-Choen, C.S. Seow, I. Seow-En, 6 Jun.1997 (ZRC). — 1 male, 1 female, Tekek-Juara Trail, Pulau Tioman, coll. F. Seow-Choen, C.S. Seow, I. Seow-En, 6 Jun.1997 (FSC). — 11 males, 7 females, Gunung Pulai, Johor, coll. F. Seow-Choen, E.P. Tay (FSC). — 1 male, Gunung Pulai, Johor, coll. F. Seow-Choen, C.W. Siow, P.S. Yeow, 30 Mar.1996 (FSC). — 1 male, 3 females, Gunung Pulai, Johor, coll. F. Seow-Choen, C.W. Siow, P.S. Yeow, 4 May.1996 (FSC). — 1 female, Gunung Pulai, Johor, coll. F. Seow-Choen, C.W. Siow, P.S. Yeow, Aug.1996 (FSC).

The male holotype will remain in the collection of F. Seow-Choen. The rest of the paratypes currently in the collection of Seow-Choen will be deposited in the ZRC, the Insect Collection at Forest Research Institute of Malaysia (FRIM), Kepong and the Pusat Sistematiik Serangga, Bangi, Malaysia.

Male. - A small thin but robust winged insect with long legs. Setose in appearance especially the legs. Antennae longer than front legs. Anterior pronotum slightly raised. A short but prominent spine is present on the mesosternum on either side just below the prosternum. Anal segment with a slight notch in centre. Cerci incurved and may extend beyond anal segment. Legs long. Fore femora are slightly broadened. Apical spines present on all femora with 4 subapical spines also present in the mid femora. The first spine is the shortest. Wings may reach either just beyond the 4th or 5th abdominal segment. Body dark brown with faint yellowish lines on the head, and mesonotum. A faint hint of tuberosity on the mesothorax. Head as broad as long with light brown longitudinal lines. The costal area is brown with yellowish blotches. The anal area is light brown with darker brown veins and periphery.

Measurement of males (holotype and paratypes): Body length 32-36mm; antennae 28-31mm; head 2-2.5mm; pronotum 2.5mm; mesonotum 4-4.5mm; metanotum 2mm; abdomen 21-24.5mm; front legs: femur 8mm, tibia 7mm, tarsus 4.5-5mm; mid legs: femur 6.5mm, tibia 6.5mm, tarsus 3.5-4mm; hind legs: femur 10mm, tibia 11mm, tarsus 5.5mm; wings 16-18mm.

Female. - Female more robust than male and wingless. Very setose in appearance especially the legs. Head as broad as long with stripes as in male. Pronotum longer than head. A short spine is present on either side of the mesosternum inferiorly just below the prosternum. Mesonotum with a number of faint tubercles. Abdominal segments 5-7 swollen, especially segment 7. Subgenital plate rounded at base almost reaching the base of anal segment. Cerci easily exceed the anal segment. Legs long with 4 subapical spines present on mid femora only. The first spine is very small. A very dark insect with variable light brown stripes. Abdominal segments 6 and 7 with black streaks.

Measurement of females (paratypes): Body length 42-47mm; antennae 36mm; head 3-3.5mm; pronotum 3.5mm; mesonotum 5-6mm; metanotum 2.8mm; abdomen 28-31mm; front legs: femur 10mm, tibia 7-8mm, tarsus 6mm; mid legs: femur 7-8mm, tibia 7mm, tarsus 4-4.5mm; hind legs: femur 10-11mm, tibia 11-11.5mm, tarsus 6-6.5mm.

Eggs. - The egg is typical of the genus: a laterally flattened glossy black to dark brown disc; a white band around the edge with a brown streak in the centre.

Etymology. - This species is named after the State of Johor, where the insect was first found.

Remarks. - Two species of *Abrosoma* have been described from Peninsular Malaysia so far (Brock & Seow-Choen, 1995): *Abrosoma festinatum* Brock & Seow-Choen, 1995 (Figs 1-2) and *A. gibberum* Brock & Seow-Choen, 1995. The species described here had been found in the forests of Johor in Peninsular Malaysia and on Pulau Tioman. The female of *A. johorensis* (Fig 3) is morphologically indistinguishable from *A. festinatum*. The male is easily distinguished from *A. festinatum* by the presence of long hind wings (Fig 4). The eggs of *A. festinatum* and *A. johorensis* differ clearly: the former are indented while the latter convex.

These insects were commonly found on their foodplants which in the wild include *Leea indica* (Leeaceae), *Melastoma malabathricum* and *Clidemia hirta* (both Melastomataceae). They are not often paired in the wild unlike *A. festinatum* and *A. gibberum* which are probably mated for life as adults (Brock and Seow-Choen, 1995). *Abrosoma johorensis* may be found

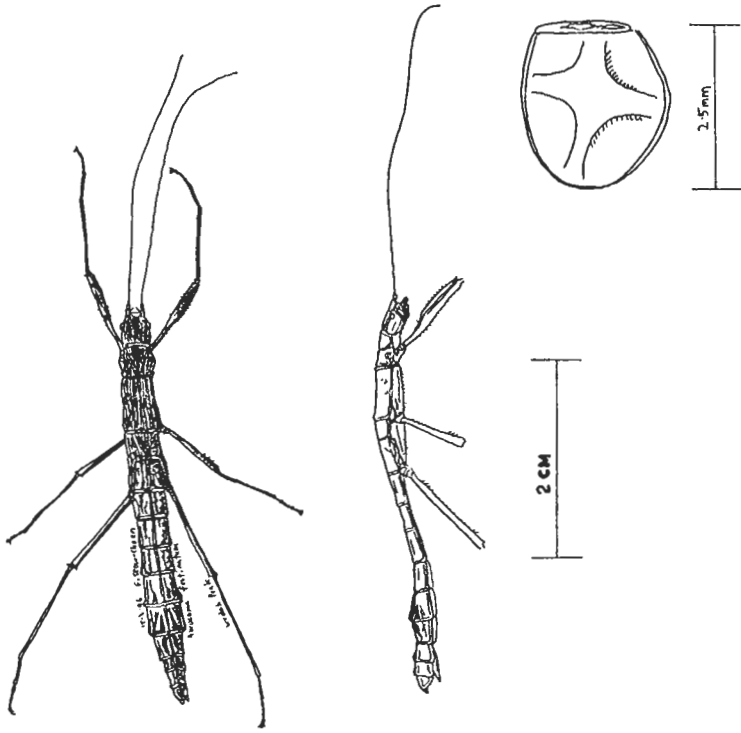


Fig. 1. Female and egg of *Abrosoma festinatum*.

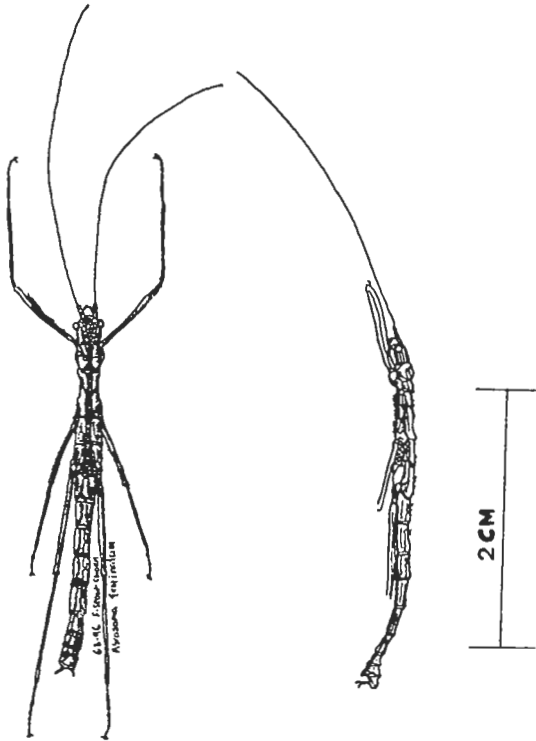


Fig. 2. Male of *Abrosoma festinatum*.

in the lowlands and low hills of Gunung Pulai, Gunung Ledang and Kota Tinggi, Johor and Pulau Tioman, Pahang in Peninsular Malaysia.

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Appendum:

The following phasmids were found in a trip on the 25 June 1998

SUBFAMILY NECROSIINAE

Sipyloidea Sipylyus (Westwood 1859)

1 female, Tekek Juara Trail, coll F. Seow-Choen, C. S. Siow, I. Seow-En, 25 Jun 1998 (FSC).

Necroschia annulipes (Gray 1835)

1 female, Tekek Juara Trail, coll F. Seow-Choen, C. S. Siow, I. Seow-En, 25 Jun 1998 (FSC).