

*Short Communication*

## Bark and ambrosia beetles (Coleoptera: Curculionidae: Scolytinae and Platypodinae) infesting mango trees (*Mangifera indica* L.) in Southern Thailand, with two new species recorded for Thailand

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### Abstract

Fifteen species of ambrosia beetles and two bark beetle belonging to the curculionid subfamilies Scolytinae and Platypodinae (Coleoptera: Curculionidae) were collected from three infested mango trees (*Mangifera indica* L.) in the research orchards of the Faculty of Natural Resources, Prince of Songkla University, Songkhla Province. Two species, *Arixyleborus grandis* (Schedl) and *Xyleborinus sculptilis* (Schedl), are recorded for the first time in Thailand.

**Keywords:** Ambrosia beetles, Scolytinae, Platypodinae, *Mangifera indica*

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### 1. Introduction

Mango (*Mangifera indica* L.) is one of the most economically important fruit trees and is widely grown in tropical and subtropical areas. More than 87 countries cultivate numerous varieties of mango, and this makes up more than 50% of the overall tropical fruit production (Stefan, 2003). Thailand is the third largest mangos producer in the world, with approximately 305,000 ha cultivated area. It produces around 2.3 million tons of mango per year (FAO Statistics, 2007; Office of Agricultural economic, 2008). Between January and August 2008, fifteen ambrosia beetles belonging to the curculionid subfamilies Platypodinae and Scolytinae (Coleoptera: Curculionidae) with two addition bark beetles, *Hypocryphalus mangiferae* Stebbing and *Coccotrypes medius* (Eggers), were collected from three mango trees (*Mangifera indica* L.) variety "Chaokhunthip" in the research orchards of Faculty of Natural Resources, Prince of Songkla University, Hat Yai Campus, Songkhla Province. Except for the scolytine, *Hypocryphalus Mangi-*

*ferae*, the specimens were collected from the trunk and main branches of infested mango trees. The mango bark beetle, *H. mangiferae* was collected from newly died small mango twigs as a result of the wilt disease or the main twigs were killed by longhorn beetles. The infested trees were physiologically weak with symptoms of decay at the base of the trunk. The collected beetles were preserved in 95% ethanol and were identified by R.A. Beaver (bark and ambrosia beetles specialist, Chiang Mai, Thailand). Some of reported species, indicated below by an asterisk, were also attacking four strongly pruned cashew trees (*Anacardium occidentale* L.) in the same orchard. All these trees died rapidly after the beetle attacks were noticed, with wilted twigs, and darkly stained wood symptoms as the result of an attack by pathogenic fungi. Six platypodine and nine scolytine species, including two species recorded for the first time in Thailand, *Arixyleborus grandis* (Schedl) and *Xyleborinus sculptilis* (Schedl).

The following species of Scolytinae and Platypodinae found in this study have been previously recorded from Thailand (see below). All except the scolytine, *Coccotrypes medius* (Eggers) and *Hypocryphalus mangiferae* Stebbing, are ambrosia beetles. They, like the majority of tropical Scolytinae, are wood borers, which feed not on the wood

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itself, but on ectosymbiotic fungi introduced into the gallery system by the beetle (Beaver, 1989).

**Scolytinae:** *Coccotrypes medius* (Eggers), *Euwallacea bicolor* (Blandford), *Euwallacea fornicatus* (Eichhoff), *Hypocryphalus mangiferae* Stebbing, *Xyleborus affinis* Eichhoff\*, *Xyleborus perforans* (Wollaston), *Xyleborus similis* Ferrari\*.

**Platypodinae:** *Crossotarsus externedentatus* (Fairmaire)\*, *Dinoplatypus biuncus* (Blandford), *Dinoplatypus cupulatus* (Chapuis)\*, *Dinoplatypus pseudocupulatus* (Schedl)\*, *Euplatypus parallelus* (Fabricius)\*, *Platypus ovatus* Strohmeyer.

## 2. New Records

### 2.1 *Arixyleborus grandis* (Schedl) (Figure 1a,b)



(a)



(b)

Figure 1

*Xyleboricus grandis* Schedl, 1942: 27.

*Arixyleborus grandis* (Schedl): Schedl, 1952: 161 (synonymy of *Xyleboricus* Eggers with *Arixyleborus* Hopkins)

**Material examined:** THAILAND, Songkhla, Prince of Songkhla University, 18.vi.2008, ex stressed mango tree (W. Sittichaya) (1 female).

#### Specimen description:

Female: body stout, prothorax equal in length to abdomen, dark-brown to black, 3.3 mm long, 2.4 times as long as wide.

**Front:** weakly convex, with small irregular shallow punctures, epistomal margin densely covered with short rusty brown hairs.

**Pronotum:** shining, subrectangular, 1.15 time as long as wide, sides subparallel to the middle, then gradually converging anteriorly to the broadly round apex, anterior margin with 5-6 small asperities anterior declivous half with small asperities, gradually increasing in size anteriorly, basal quarter densely coarsely punctured, punctures decreasing in size anteriorly and gradually replaced by transverse rugulosity extending to summit.

**Scutellum:** small, subrounded and shining.

**Elytra:** broad and 1:1 times as long as pronotum (original description 1.3 times as long as pronotum), 1.3 time as long as wide, basal margin weakly incurved on either side of scutellum, lateral margins subparallel in basal one-third, then narrowing posteriorly to the angularly rounded apex; basal quarter of the elytra shining with dense, deep, irregular punctuation, declivity convex, beginning in basal third, the interstriae very narrow, keel-like, each with uniseriate backwardly-directed low pointed teeth, higher at base of declivity and decreasing in size towards apex, a semiappressed hair between each tooth striae wide, forming shallow grooves between interstriae, surface matt, punctures replaced by small granules.

**Distribution:** Previously recorded from East Malaysia (Sarawak), Indonesia (Java), Philippines. The species has been imported to Japan in timber from the Philippines (Browne, 1983; Ohno *et al.*, 1987).

**Biology:** The biology and gallery system was briefly described and illustrated by Kalshoven (1959). The gallery penetrates up to about 4 cm into the wood. The part way along this is a brood chamber in the longitudinal plane. It starts as a short downward branch, but is gradually enlarged (Kalshoven, 1959). The enlargement is probably due to the activities of the larvae rather than the female parent. Kalshoven (1959) recorded brood sizes of 20–36 offspring in three mature galleries. The species is probably polyphagous. Recorded hosts are *Canarium commune* (Burseraceae), *Dipterocarpus* sp. (Dipterocarpaceae), *Palaquium* sp. (Sapotaceae). The species has not been recorded before from mango (*Mangifera indica*) (Anacardiaceae). Kalshoven (1958) notes that in Java the species was common in *Canarium commune* together with the ambrosia beetles, *Euwallacea fornicatus* (Eichhoff) and *Xyleborinus artetriatus* (Eichhoff).

### 2.2 *Xyleborinus sculptilis* (Schedl) (Figure 2a,b)

*Xyleborus sculptilis* Schedl, 1964: 247.

*Xyleborinus sculptilis* (Schedl): Wood & Bright, 1992: 816.

**Material examined:** THAILAND, Songkhla, Prince of Songkhla University, 18.vi.2008, ex stressed mango tree



(a)



(b)

Figure 2

(W.Sittichaya) (120 female, 20 male).

**Specimen description:** Female reddish brown, cylindrical, 2.0-2.1 mm long, about three time as long as wide.

**Front:** predominantly broadly convex, shining, with small irregular shallow punctures, puncturation and pubescence inconspicuous.

**Pronotum:** longer than wide (1.37:1) postero-lateral angles broadly rounded, sides parallel to beyond the middle, apex moderately broadly round, subapical constriction merely indicated, summit distinctly before the middle, apical area convex and very densely covered with minute asperities, basal area weakly punctured with shallow, fine irregular punctures.

**Scutellum:** reduced, knoblike, surrounded by tufts of hairs in a rather large triangular scutellar space.

**Elytra:** 1.1-1.2 time as long as pronotum, 1.65 time as long as wide, humeral angles feebly rounded, sides straight and parallel in basal three-fifths, apex very broadly rounded, subtransverse near the suture, declivity commencing far behind the middle, declivity steeply convex with long yellowish hairs, first interstriae with a few granules in the upper half, second interstriae narrow, impressed, lacking granules, third interstriae with three equally-spaced larger granules, the last one almost on the apical margin, two further similar granules near the apices of interstriae 5 and 7.

**Distribution:** Previously known only from the original record from East Malaysia (Sarawak) (Schedl, 1964).

**Biology:** The only recorded host is *Artocarpus heterophyllus* (jackfruit) (Moraceae) (Schedl, 1964). This is the first record from mango (*Mangifera indica*) (Anacardiaceae). The gallery system is not known, but is likely to resemble that of other species of the genus, similar to that described above for *Arixyleborus grandis*.

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