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## Additional records and descriptions of the ant-mimetic plant bug genus *Pilophorus* from Thailand (Hemiptera: Heteroptera: Miridae: Phylinae: Pilophorini)

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### Abstract

Eleven species of the ant-mimetic plant bug genus *Pilophorus* Hahn from Thailand are documented, with photographic images of live individuals. Four new species with conventional, moderate antlike shape, *Pilophorus meteorus*, *P. saovapruki*, *P. subparallelus* and *P. suwimonae*, are described. Two known Thai species, *P. alstoni* Schuh and *P. typicus* (Distant), are further reported and diagnosed. Biological information including host association is provided for *P. alstoni*, *P. meteorus*, *P. saovapruki* and *P. typicus*. A checklist of all currently known species of *Pilophorus* in Thailand and a key to known Thai species are included. *Pilophorus typicus* is reported from Singapore for the first time.

**Key words:** Heteroptera, Miridae, taxonomy, Phylinae, Pilophorini, *Pilophorus*, new species, Thailand, myrmecomorphy

### Introduction

*Pilophorus* Hahn of the subfamily Phylinae is a well-known plant bug genus, including myrmecomorphic members that frequently co-occur with ants. This genus is currently composed of more than 120 valid species from most zoogeographical regions except for Australia and South America (Schuh, 1991; 1995; Yasunaga & Schuh, 2013).

In the Oriental Region, Schuh (1984) comprehensively documented the fauna of *Pilophorus* for the first time. Very recently, Yasunaga & Schuh (2013) described three strikingly antlike members from Thailand, and Nakatani *et al.* (2013) added seven *Macaranga*-inhabitants in Malaysia. Currently, *Pilophorus* contains at least 30 species from the Oriental Region, and the Thai fauna comprises seven congeners, *P. alstoni* Schuh, *P. barbiger* Yasunaga & Schuh, *P. giraffoides* Yasunaga & Schuh, *P. maculatus* Schuh, *P. pleiku* (Schuh), *P. portentosus* Yasunaga & Schuh, and *P. typicus* (Distant).

This paper represents part of recent attempts to document the plant bug fauna of the mirid subfamily Phylinae in Thailand (Yasunaga, 2010, 2012, 2013; Yasunaga *et al.*, 2013a, b), and describes four new species with ‘moderately’ ant-mimetic, conventional shape, subsequent to Yasunaga & Schuh (2013) who particularly treated ‘strikingly’ antlike, or otherwise morphologically novel, particular members of *Pilophorus*.

Four new species are described as new. Two known species previously recorded from Thailand by Schuh (1984), *P. alstoni* Schuh and *P. typicus* (Distant), are further noted, diagnosed, and figured; the latter species is reported also from Singapore for the first time. Biological information is briefly provided for four species, and digital photographic images of live individuals are presented for all treated species. A checklist of all currently known congeners of *Pilophorus* in Thailand and a key to Thai species are included.

**Biology.** This predaceous pilophorine is not host plant specific, and both adults and immature were found from various herbs and broadleaved trees as well as crops. Because the active stages of *P. typicus* are observed to prey on various agricultural pest insects and mites, it is now regarded to be a candidate as an indigenous natural enemy in biological control programs. This species is assumed to have two genotypes in Japan, although these different races are yet to be determined by morphological characters alone (Ito *et al.*, 2011). Examinations of the male genitalia by the first author TY suggested that the populations in Thailand and many parts of the Oriental Region (including Japanese Ryukyu Islands) may fit the ‘true or broadly conceived’ *typicus*. However, further investigation is required to properly identify some sibling species.

**Specimens examined. THAILAND: Chaiphaphum:** 1♂, Chulabhom Dam, 16°32–33'N, 101°38–39'E, 760–780 m, 16 Apr 2013, T. Yasunaga (AMNH\_PBI 00380192) (TYCN). **Nakhon Nayok:** 1♂, Sarika, 14°18'39"N, 101°18'00"E, at light, 13 Mar 2009, T. Yasunaga (00380193) (TYCN). **Nakhon Ratchasima:** 1♂, SERS near dam, 14°29'49"N, 101°54'57"E, 500 m alt., 28 Oct 2008, T. Yasunaga (00380194) (TYCN). **Saraburi:** 1♀, Kaeng Khoi, Kyusei Organic Farm, 14°32'75"N, 101°04'71"E, mango flower, 22 Jan 2009, T. Yasunaga, K. Yamada (00380195) (TYCN). **JAPAN: Ryukyus:** 1♂, Ishigaki Island, Ban'na Park, on ornamental *Hirado-Azalea* (*Rhododendron x pulchrum*), 21 Nov 1997, T. Yasunaga (00380196) (TYCN). **SINGAPORE:** 1♀, Pulau Ubin (Ubin Island), 4 Jan 1989, T. Yasunaga (00380197) (TYCN). **SRI LANKA:** 1♀, image examined (00085509) (lectotype, BMNH).

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