



## Key to the species of Eotrechinae (Hemiptera: Heteroptera: Gerridae) of Thailand and review of the fauna of the Phetchabun Mountain Range

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### Abstract

Water striders of the subfamily Eotrechinae from the Phetchabun Mountain Range can be found at the margins of rock pools and puddles, and in hygropetric habitats including waterfalls. Twenty-two species in three genera are known from Thailand. In the Phetchabun Mountain Range, 12 species representing all three genera were recorded from over a decade of collections (2002–2012). This paper provides taxonomic, biological, and ecological information for taxa of the Phetchabun Mountain Range in Thailand and a taxonomic key to all known species from Thailand.

**Key words:** Eotrechinae, Gerridae, Phetchabun Mountain Range, Thailand

### Introduction

Gerridae (Hemiptera: Heteroptera: Gerromorpha) is one of the most common groups of insects in semiaquatic habitats throughout the world, within which eight subfamilies have been recognized (Andersen 1982a). Eotrechinae, one of the eight subfamilies, is known to occur only in Asia west of the Wallace's Line (Chen et al. 2005) and comprises 60 described species representing five genera: *Amemboa*, *Chimarrhometra*, *Eotrechus*, *Onychotrechus*, and *Tarsotrechus* (Andersen 1982a,b; Chen et al. 2005). Unlike other water striders, members of Eotrechinae are known to occur in hygropetric habitats (Polhemus & Andersen 1982). The adaption to these habitats by members of Eotrechinae required morphological modifications including the structure of leg segments, especially the tarsal claws (Polhemus & Andersen 1982). Specifically, species of *Eotrechus* have proximally thickened middle and hind femora and well-developed apical claws, which allow them to live on vertical rock faces (Polhemus & Andersen 1982).

Chen and Zettel (1998) provided a key to genera and a checklist of more than 60 species representing 23 genera and seven subfamilies in their review of the Gerridae of Thailand. Of these, the subfamily Eotrechinae was represented by 12 species in three genera (i.e., *Amemboa*, *Eotrechus*, and *Onychotrechus*) (Chen & Zettel 1998). Recently, seven additional species were reported from Thailand, including one new species of *Amemboa* and three new species of *Eotrechus* (Zettel 2002, Vitheepradit & Sites 2007, Vitheepradit 2008). Members of this subfamily are distributed throughout the country. Specifically, members of *Amemboa* are found in both lentic and lotic habitats in lowlands and highlands, whereas members of *Eotrechus* and *Onychotrechus* occur in hygropetric areas of highland waterfalls (Vitheepradit 2008).

Presented here is a taxonomic key to the species of Eotrechinae of Thailand and faunistic assessment with taxonomic and ecological notes on the taxa of the Phetchabun Mountain Range in Thailand.

### Material and methods

The study area focused on montane aquatic habitats (e.g., streams, waterfalls) of the Phetchabun Mountain Range

wingless female); Tad Mok NP, Song Nang Waterfall, 16°22'N 101°22'E, 800 m, 30-IV -2004, A. Vitheepradit, L-654 (1 winged male); Nam Nao NP, Sum Ma Cow, 16°41'N 101°40'E, 562 m, 20-XII-2012, KU team, C-238 (1 wingless female); **Phitsanulok Province:** Phu Hin Rongkla NP, Waterwheel Fall and stream, 16°59'N 101°00'E, 1280 m, 10-III-2002, R.W. Sites, A. Vitheepradit, and K. Kirawanich, L-285 (1 winged female); Phu Hin Rongkla NP, Romglao Waterfall, 16°59'N 101°00'E, 1190 m, 11-III-2002, R.W. Sites, A. Vitheepradit and K. Kirawanich, L-288 (1 winged male, 1 winged female); Phu Hin Rongkla NP, Nam Tok Palad, 16°59'N 101°00'E, 300 m, 12-III-2002, R.W. Sites, A. Vitheepradit and K. Kirawanich, L-289 (1 winged male); Phu Hin Rongkla NP, Huai Kha Mheun, 16°59'N 101°00'E, 1253 m, 6-V-2003, A. Vitheepradit and T. Prommi, L-505 (8 winged males, 1 wingless male, 6 winged females, 3 wingless females); Phu Hin Rongkla NP, Romglao Waterfall, 16°59'N 101°00'E, 1190 m, 6-V-2003, A. Vitheepradit and T. Prommi, L-507 (1 wingless female).

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