



## Description of *Luciola aquatilis* sp. nov., a new aquatic firefly (Coleoptera: Lampyridae: Luciolinae) from Thailand

ANCHANA THANCHAROEN<sup>1</sup>, LESLEY A. BALLANTYNE<sup>2</sup>, MARC A. BRANHAM<sup>3</sup> &  
MING-LUEN JENG<sup>4</sup>

<sup>1</sup> Department of Biology, Faculty of Science, Mahidol University, 10400, Thailand. E-mail: koybio@yahoo.com

<sup>2</sup> School of Agricultural and Veterinary Sciences, Charles Sturt University, PO Box 588, Wagga Wagga, NSW 2678, Australia

<sup>3</sup> Department of Entomology and Nematology, University of Florida, Gainesville, FL 32611–0620, USA

<sup>4</sup> Division of Entomology, Natural History Museum and Biodiversity Research Center, University of Kansas, 1501 Crestline Drive, Suite 140., Lawrence, KS 66049–2811, USA

### Abstract

A new species of aquatic firefly belonging to *Luciola* Laporte is described and illustrated based on external morphology of both males and females, and the genitalia of males. *Luciola aquatilis* sp. nov., a common firefly in Thailand was formerly commonly misidentified as *Luciola brahmia* Bourgeois. Other *Luciola* species that resemble *L. aquatilis* are discussed, as well as past confusion concerning their taxonomic affinities.

**Key words:** Coleoptera, Lampyridae, *Luciola aquatilis*, firefly, new species, Thailand

### Introduction

Thailand is recognized as a biodiversity hotspot (Brooks et al. 2002). Only 14 described firefly species representing six genera (*Diaphanes* (1 sp.), *Lamprigera* (1 sp.; *Lamprophorus* is a junior synonym), *Luciola* (4 spp.), *Pteroptyx* (2 spp.), *Pyrocoelia* (5 spp.) and *Pyrophanes* (1 sp.)) are recorded from Thailand (Hutacharn et al. 2007). Estimates of actual species numbers (Dr. Angoon Lewvanich, Firefly Project under HM Queen Sirikit's Initiative, Botanical Garden Organization, Ministry of Natural Resource and Environment, Thailand, personal communication) are thought to be more than twice this figure. Difficulties in accessing type specimens as well as the large diversity of some genera and the taxonomic uncertainty of many species have made identification to the species level quite difficult.

The new species described in this work is familiar to researchers in Thailand, though for many years it was incorrectly identified as *Luciola brahmia* Bourgeois. Not only was this species not described, but it is morphologically very similar to several other described *Luciola* species, hence the confusion. There is a possibility that this undescribed species was recorded by Olivier (1885) from Java as *Luciola japonica* Thunberg which has “grayish brown elytra with dark vague basal marking and black apical marking on elytra” (Kawashima et al. 2003). This similarity to other described *Luciola* species complicated efforts to diagnose the true status of this species. The situation was resolved by a group effort made by the authors of this manuscript.

While working on a larval description co-authors Branham and Thancharoen contacted Ballantyne for comment. Ballantyne and Fu (working with Ballantyne at the time) concluded that larval specimens that they