



***Aquatica* gen. nov. from mainland China with a description of *Aquatica Wuhana* sp. nov. (Coleoptera: Lampyridae: Luciolinae)**

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Abstract

Aquatica, a new genus of aquatic fireflies from mainland China, is described and keyed from males of *A. leii* (Fu et Ballantyne 2006), *A. ficta* (Olivier 1909), *A. hydrophila* (Jeng et al. 2003) and *A. lateralis* (Motsch. 1860), all transferred from *Luciola*, and *A. wuhana* sp. n. from Hubei Province, which is described from adult males and females and larvae. Adult females and larvae are associated for all species. Five species of aquatic fireflies are now recorded from China.

Key words: *Aquatica* gen. nov., *A. wuhana* sp. n., China

Introduction

Ballantyne and Lambkin (2009) established a well supported clade consisting of *Luciola leii* Fu et Ballantyne and *L. ficta* Olivier (node 2, Fig. 1), and further broader unpublished studies including *L. hydrophila* Jeng et al. and *L. lateralis* Motsch. confirmed the relationships found in the 2009 paper. Here, *Aquatica*, a new genus of aquatic fireflies, is erected for these four species and a new species *A. wuhana* sp. n., characterised by aquatic larvae having lateral tracheal gills in the abdomen. Ballantyne and Lambkin (2009) separated *L. leii* and *L. ficta* from two other lucioline species with very similar aquatic larvae viz. *L. cruciata* and *L. owadai* (node 1, Fig. 1) and supported the results by Suzuki (1997) and Suzuki et al. (2004). *A. wuhana* sp. n., the type species, constitutes the fifth record of aquatic fireflies from China. Another aquatic species, *Luciola substriata* Gorham, is not assigned to this new genus. In what is a fairly rare occurrence in the Luciolinae, all species in this new genus have reliably associated females and larvae.

Aquatic fireflies are aquatic only in their larval stage and their adults are free flying. Verified records of aquatic fireflies from SE Asia, or elsewhere for that matter, are rare. In many cases relocation of the specimens used in published descriptions is not possible. Often no indication is given that there is any reliable association between adults and larvae, resulting in possible errors in identification. Adults may have been described with no knowledge of their larvae.

Here we use the phylogenetic inference from the prior analysis (Ballantyne and Lambkin 2009), together with behavioural and morphological evidence, to verify the erection of the new genus *Aquatica*. We describe the new genus on the basis of male, female and larval morphology. We provide keys to males of all five species and test the inferred relationship between the new genus and the Luciolinae, *sensu lato*, derived from an earlier phylogenetic study (Fig. 1).