



# Article

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## Revision of the genus *Alyculus* Kazantsev, 1999 (Coleoptera: Lycidae)

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### Abstract

The genus *Alyculus* Kazantsev, 1999 is revised. Four species are placed in the genus, two of them are described here: *A. barclayi* **sp. nov.** and *A. tujuhensis* **sp. nov.** Male genitalia and important diagnostic characters are illustrated and an identification key to males is provided. The zoogeography and some aspects of ecology are discussed.

**Key words:** Coleoptera, Lycidae, *Alyculus*, new species, neoteny, taxonomy, Oriental Region

### Introduction

Although neotenic development of lycid females has been known since the beginning of the 20<sup>th</sup> century (Gravely 1915; Mjöberg 1925), only recently has an intensive field research yielded, similarly with other groups of Lycidae, the discovery of much higher diversity of the Oriental net-winged beetles than was earlier expected (Bocak & Bocakova 2008, Bocakova 2006, Kazantsev 1999, Weiszenstein & Bocak 2011, Kubecek *et al.* 2011). *Alyculus* Kazantsev, 1999 is one of the recently described genera with presumed neotenic development of females. It was proposed as a monotypic genus for a single species from Java. Later, Bocakova (2006) described another species from the Aceh Province in Sumatra. *Alyculus* is a very characteristic brachyelytrous lycid with a fragile, extremely small body (Figs 1–2). These lycids seem to be much more common than we would have estimated when a single specimen was collected in the frequently visited locality in Java in 1997 (Kazantsev 1999). The small body size and superficial similarity with cecidomyid flies might be a reason why these net-winged beetles were so neglected by collectors.

The analyses of extensive molecular data by Bocak *et al.* (2008) supported the close relationships of the neotenic genera *Platerodrilus* Pic, 1921, *Lyropaeus* Waterhouse, 1878, and *Alyculus*. Considering the high morphological differentiation and hypothesized long time since separation of *Lyropaeus* and *Alyculus* lineages, Bocak & Bocakova (2008) erected for the genus the monotypic tribe Alyculini in the redefined subfamily Lyropaeinae. Here, two new species of the genus are reported and accompanied with a key to known species and new distribution data. The neotenic development resulting in extremely low dispersal ability strongly affects speciation (Malohlava & Bocak 2010), and therefore the data from various neotenic lineages can reveal general patterns in their distribution and diversity.

### Material and methods

Several large collections were recently studied, but only a single specimen of *Alyculus* was found in the collection the Natural History Museum in London and further specimens were recently collected in Sumatra. All species were available for this revision: *A. kurbatovi* Kazantsev, 1999 was available from the type locality and the holotype of *A. wittmeri* Bocakova, 2006 was available for comparison with newly collected specimens.

Male genitalia of all available specimens were dissected and illustrated. The apical part of the abdomen of each specimen was removed and shortly softened in hot 10% aqueous potassium hydroxide. The illustrations of genitalia