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Taxonomy of the genus *Megalinus* Mulsant & Rey (Coleoptera: Staphylinidae, Xantholinini) and seven new species from China

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Abstract

This paper studies the taxonomy of the genus *Megalinus* Mulsant & Rey, 1877 (Coleoptera: Staphylinidae, Xantholinini) and offers a comprehensive revision of the Chinese fauna. Seven new species are described: *Megalinus ailaoshanensis* Zhou & Zhou **sp. nov.** from Yunnan, *M. hailuogouensis* Bordoni **sp. nov.** from Sichuan, *M. liupanshanensis* Zhou & Zhou **sp. nov.** from Ningxia, *M. ningxiaensis* Bordoni **sp. nov.** from Ningxia, *M. nonvaricosus* Zhou & Zhou **sp. nov.** from Ningxia, *M. solidus* Zhou & Zhou **sp. nov.** from Hainan and Yunnan, and *M. tangi* Bordoni **sp. nov.** from Xizang. The taxonomic status of *M. leishanensis* (Bordoni, 2007) is reinstated and treated as a valid species here. The following new synonym is proposed: *M. suffusus* (Sharp, 1874) = *L. flavoelytratus* (Bordoni, 2007) **syn. nov.** Three species originally described in Chinese are redescribed here: *M. cinnamomeus* (Zheng, 1994), *M. coracinus* (Zheng, 1994) and *M. zhenyuanensis* (Zheng, 1994). Therefore the Chinese fauna of the genus *Megalinus* is now represented by a total of 33 species. A key to all Chinese species is provided.

Key words: Coleoptera, Staphylinidae, Xantholinini, *Megalinus*, new species, reinstated status, new synonym, key to species

Introduction

The rove beetle genus *Megalinus* Mulsant & Rey, 1877 belongs to Xantholinini, a tribe usually placed in the subfamily Staphylininae (Coleoptera: Staphylinidae) with more than 110 genera. However, its taxonomic position is not fully settled (Herman 2001a; Assing 2000; Newton et al. 2000; Zhou 2005; Chatzimanolis *et al.* 2010). The genus *Megalinus* Mulsant & Rey was erected originally as a subgenus of the genus *Xantholinus* and included the only species *Staphylinus glabratus* Gravenhorst, 1802, which was thus fixed as the type species by monotypy (Blackwelder 1943). In fact, *Megalinus* Mulsant & Rey was not considered as a valid genus for a long time: most authors treated it as a subgenus in the genus *Xantholinus* Dejean, 1821 (e.g., Cameron 1932; Tottenham, 1949a; Coiffait 1956) and some simply as a synonym of the latter (e.g., Smetana 1958). It was Coiffait (1972) who treated *Megalinus* Mulsant & Rey as a valid genus and this treatment was followed in Bordoni (1982, 2002) and other most recent publications (e.g., Herman 2001a; Smetana 2004; Assing 2007; Bordoni 2007b).

In the taxonomic history of the genus *Megalinus* Mulsant & Rey, some genus group names were categorized as synonyms of *Megalinus* Mulsant & Rey: Blackwelder (1943) recognized *Metacyclinus* Reitter, 1908 as a synonym and Bordoni (1982) accepted this treatment; Assing (2007) treated *Leptophius* Coiffait, 1983 and *Leptophallus* Coiffait, 1956 as synonyms; Bordoni (2008, 2012b) regarded *Lepidophallus* Coiffait, 1956 and *Lemiganus* Bordoni, 1985 as synonyms. Although all these synonymies were based on simple morphological observations rather than any form of phylogenetic analysis, they were commonly accepted. Because this paper concentrates on a taxonomic revision of the genus *Megalinus* occurred in China and reports the faunistic finding in our study, we follow thus the widely accepted concept of the genus *Megalinus* Mulsant & Rey.

Before our study, the world fauna of the genus *Megalinus* Mulsant & Rey was composed of 46 species, of which 26 were found to occur in China. A brief summary of the history of exploration of the Chinese fauna of *Megalinus* is provided in the **Table 1**. Obviously, the species diversity is very high in China; no doubt, it is a species rich group with very high degree of endemism in China.

Our study is focused on the taxonomy of the genus *Megalinus* and aims at a comprehensive revision of the Chinese fauna of this genus. Seven new species are described: *Megalinus ailaoshanensis* Zhou & Zhou **sp. nov.**, *M. hailuogouensis* Bordoni **sp. nov.**, *M. liupanshanensis* Zhou & Zhou **sp. nov.**, *M. ningxiaensis* Bordoni **sp. nov.**, *M. nonvaricosus* Zhou & Zhou **sp. nov.**, *M. solidus* Zhou & Zhou **sp. nov.**, and *M. tangi* Bordoni **sp. nov.** *Megalinus leishanensis* (Bordoni, 2007) is reinstated and treated as a valid species. The following synonymy is proposed: *M. suffusus* (Sharp, 1874) = *L. flavoelytratus* (Bordoni, 2007) **syn. nov.** As a result, 33 species of *Megalinus* are currently known from China. A key to their identification is provided.

Materials and methods

Specimens were relaxed in warm water (60 °C) for about 5–8 hours, then cleared in 10% KOH for 5 minutes, and transferred to 75% alcohol. The cleared specimens were dissected for morphological studies of the abdominal segments VIII–X and the median lobe of aedeagus. After examination, the body parts were stored permanently in