



A new fossil genus of the family Glaphyridae (Coleoptera: Scarabaeoidea) from the Lower Cretaceous Yixian Formation

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Abstract

Lithohypna chifengensis, **new genus and species** of the family Glaphyridae MacLeay, 1819 is described and illustrated from the Lower Cretaceous Yixian Formation of Liutiaogou of Inner Mongolia, China.

Key words: Coleoptera, Scarabaeoidea, Glaphyridae, new genus, new species, fossils, Mesozoic, Yixian Formation, China

Introduction

The extant Glaphyridae MacLeay, 1819 is comprised of about 200 species and subspecies in six genera (Carlson 2002; Nikodym 2005; Nikodym & Bezdek 2006; Nikodym & Keith 2007; Keith 2007, 2008a, 2008b; Keith & Uliana 2008; Sabatinelli & Uliana 2009; Uliana & Sabatinelli 2010). Most extant Glaphyridae genera are restricted to the Palaearctic (Medvedev 1960). The Nearctic region is home to only nine species within a single endemic genus, *Lichnanthe* Burmeister, 1844 (Carlson 2002). Species of the genus *Amphicomma* Latreille, 1807 occur in the Palaearctic and Oriental regions. The South American tribe Lichniini Burmeister, 1844 (Scarabaeidae: Melolonthinae) was recently transferred out of the family Glaphyridae based on morphological and DNA analysis (see Hawkins 2006).

The extinct species of the Glaphyridae have been placed into three genera. Species of the extant genus *Glaphyrus* Latreille, 1802 have been found in the Miocene of Germany (Krell 2007) and in the Yixian Formation of China (Nikolajev & Ren 2011). One species of the extant North American genus *Lichnanthe* has been found in the Oligocene of the USA (Carlson 2002, Krell 2007). The Mesozoic genus *Cretoglaphyrus* Nikolajev, 2005 has been described from the Upper Cretaceous of Siberia (Nikolajev 2005, Krell 2007).

Here we describe a recently collected species of the new Mesozoic genus based on two specimens from the Lower Cretaceous Yixian Formation. This species is placed in the family Glaphyridae based on the following characters: antennal club with three antennomeres, mandibles produced beyond apex of clypeus, eyes partially divided by canthus, and pygidium visible beyond elytra.

Material and methods

Fossils were collected from the Lower Cretaceous Yixian Formation of the Liutiaogou Village, Chifeng City, Inner Mongolia, China. These specimens were examined dry and under alcohol, using a Nikon SMZ1000 stereomicroscope. Illustrations were made with the aid of a camera lucida. The photographs were prepared using a digital camera (DXM1200) connected to the above stereomicroscope. All specimens are deposited in the Nanjing Institute of Geology and Palaeontology (NIGP), Chinese Academy of Sciences.