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The first fossil Cydnidae (Hemiptera: Pentatomoidea) from the Late Mesozoic of China

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Abstract

Two new genera and two new species of fossil amnestine burrower bugs, *Cilicydnus robustispinus* **gen. & sp. nov.** and *Orienicydnus hongi* **gen. & sp. nov.**, are described and illustrated. They were collected from the Late Mesozoic nonmarine sedimentary strata of Northeast China. This finding represents the first record of fossil cydnids from China. The fossil cydnid localities and the distribution of extant taxa are summarized in a map.

Key words: Heteroptera, Pentatomoidea, Cydnidae, Amnestinae, fossil, Late Jurassic — Early Cretaceous, Yixian Formation, China

Introduction

The subfamily Amnestinae, containing only one extant genus, *Amnestus* Dallas with 25 extant species, is distributed in the Western Hemisphere and Iran (Froeschner 1960, Lis 1998). Representatives of this subfamily are small (1.6–8 mm) and can be easily recognized by the presence of distinct claval commissure, an unusual feature in Pentatomoidea. Fossils of Amnestinae are represented by 7 species belonging to 5 genera (Pinto & Ornellas 1974, Popov 1986, 1990; Thomas 1988, 1994; Popov & Pinto 2000, Shcherbakov & Popov 2002). Recently we discovered three well-preserved fossil burrower bug specimens, including one part and counterpart from the Yixian Formation, in Chaomidian Village, Beipiao City, Liaoning Province, China. Because they cannot be assigned to any known genera, we erect two new genera to accommodate them.

The geological age of the Yixian Formation is still contentious, considered to be Late Jurassic (Ren *et al*. 1997, Zheng *et al*. 2003), the transition from Late Jurassic to Early Cretaceous (Chen *et al*. 2004, Wang *et al*. 2004), and the Early Cretaceous (Swisher *et al*. 1999, Li *et al*. 2001, Pang *et al*. 2002, Zhou *et al*. 2003). Recently, Wang *et al*. (2005) summarized and analyzed the geological age of the Yixian Formation by abundant fossil data and isotope data, and finally considered that the synthetic age of the Yixian Formation may be determined as Late Jurassic to Early Cretaceous. We accept this opinion and consider the age of the Yixian Formation as the transition from Late Jurassic to Early Cretaceous (Late Tithonian to the Berriasian).

Material and methods

All the type specimens of the new species are preserved at the Key Laboratory of Insect Evolution & Environ-

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