



Two new genera of fossil palaeontinids from the Middle Jurassic in Daohugou, Inner Mongolia, China (Hemiptera, Palaeontinidae)

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Abstract

In this paper two new genera and three new species of Palaeontinidae are described: *Quadraticossus* gen.nov., containing two new species, *Q. fangi* and *Q. longicaulis*; *Hamicossus laevis* gen. et sp. nov. These two new genera are established based on both complete forewings and hind wings. All of them were collected from the Middle Jurassic Jiulongshan Formation at Daohugou Village, Inner Mongolia. The type specimens are deposited in the College of Life Science, Capital Normal University.

Key words Morphology, taxonomy, palaeontology, Cicadomorpha, Mesozoic

Introduction

Palaeontinidae Handlirsch, 1906 is an extinct family of hemipteran insects with 34 known genera and 71 species recorded from Eurasia, America, Africa and Australia, which occurred throughout the Mesozoic, from the Triassic to the Cretaceous (Carpenter 1992; Ren *et al.* 1998; Menon *et al.* 2005; Wang & Ren 2006; Wang *et al.* 2006a, b).

Palaeontinids have large setose bodies, small heads, and broad wings, so they were originally thought to be moths. The bodies are even rarer than fossils with both wings present, and nothing is really known about the heads, so their placement in Cicadomorpha is problematic, and this lack of information and the confusion of these insects with moths, led Evans (1956) to list the cicada-like forms under “Cicadomorphidae” while retaining the moth-like fossils under Palaeontinidae.

Up to now, 16 known genera and 29 species fossil palaeontinids have been found from northern China. Well-preserved specimens described in this paper were collected from a small section of the Jiulongshan Formation at Daohugou (N41°18'38", E119°13'20") of the town of Ningcheng in southeastern Inner Mongolia, China. So far, the genera erected based on both forewings and hind wings are rare: only 5 genera described so far include both forewings and incomplete hind wings (Evans 1956; Martins-Neto 1998; Ren *et al.* 1998; Menon *et al.* 2005). Our findings represent one of the first records of well-preserved forewings and complete hind wings in Daohugou area. The age of the Daohugou fossil-bearing beds is still being debated and three opinions have been presented: Middle Jurassic (Shen *et al.* 2003; Chen *et al.* 2004; Liu *et al.* 2004; Ren *et al.* 1995; Ren *et al.* 2002; Ren & Krzemiski 2002; Ji *et al.* 2006; Gao & Ren 2006; Huang *et al.* 2006), Late Jurassic (Zhang 2002) or Early Cretaceous (Wang *et al.* 2005). We believe it to be Middle Jurassic (Jiulongshan Formation).