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Variability of *Habroblattula drepanoides* gen. et. sp. nov. (Insecta: Blattaria: Blattulidae) from the Yixian Formation in Liaoning, China

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Abstract

Habroblattula drepanoides **gen. et sp. nov. (**Blattulidae) is described from the Late Jurassic or Early Cretaceous sediments of the Yixian Formation in Western Liaoning, China. Wing venation of *Habroblattula drepanoides* reveals low coefficient of variation (CV) for total number of the forewing veins (CV=5.72) which indicates active flight capability. The higher hindwing variability (CV=14.43) might suggest *Habroblattula* was an advanced genus, may be caused by the regulation of the vein. The asymmetry between the left and right forewing in the same individual indicates the flight was limited when comparing with the CV of the left and right forewings.

Key words: Blattulidae, new genus, new species, coefficient of variation, Late Jurassic, Early Cretaceous, Yixian Formation, China

Introduction

Cockroaches have existed since the Carboniferous until now (Carpenter 1953, Tan 1980). At least 19 different families are represented in the fossil record (Vršanský 2002b, Liang 2006).

Representatives of the family Blattulidae were placed in the Mesoblattinidae, until Vishniakova (1983) established the new family and commented on its relation with Polyphagoidea. This relation, namely with the family Liberiblattinidae, was supported by Vršanský (1999, 2002a). The significance of studying on Blattulidae was proved in displaying decreasing variability of the families (Vršanský 2000, Vršanský & Ansorge 2006), in reconstructing ecosystems of the Mesozoic, but also curious in findings of hindwings from drilling core samples (Vršanský 2005a).

The Blattulidae is a family of cosmopolitan Mesozoic cockroaches. Nevertheless, their diversity at the generic level is poor—only 13 genera are known in their greater than 100 million years history (Vršanský 2005a, Cifuentes *et al*. 2006). It is significant that well-preserved and sophisticatedly coloured complete fossil specimens, belonging to a new genus *Habroblattula gen. nov.,* have been recovered from Yixian Formation.

Material and methods

Twenty eight specimens, housed in the fossil insect collection of the key lab of Insect Evolution and Environment Change, Capital Normal University, Beijing, China, were examined using LEICA MZ12.5 dissecting microscope and illustrated with a drawing tube attached to the microscope. Fossil photographs were made using LEICA DC 300 photographic equipment.

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