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New taxa of Aboilinae (Insecta, Orthoptera, Prophalangopsidae) from the Middle Jurassic of Daohugou, Inner Mongolia, China

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Abstract

A new genus, *Sigmaboilus* gen. nov., is established and attributed to Aboilinae (Insecta, Orthoptera, Prophalangopsidae). It includes three new species, *Sigmaboilus gorochovi* **sp. nov.**, *S. sinensis* **sp. nov.**, and *S. longus* **sp. nov.**, from the Middle Jurassic of Daohugou in Inner Mongolia, China, and is distinguished from other genera within Aboilinae by the remarkably long C vein in the tegmen.

Key words: Orthoptera, Prophalangopsidae, new taxa, Middle Jurassic, Daohugou, China

Introduction

Aboilinae Martynov, 1925 is an abundant subfamily of Prophalangopsidae in the Jurassic and Cretaceous and includes about 12 genera (Gorochov, 1995, 2003). Lin (1965) reported two prophalangopsids from China, one of which can be placed in the Aboilinae and consequently became the first known representative of this subfamily in China. Very recently, abundant and well-preserved Prophalangopsidae specimens have been collected from the Middle Jurassic of Daohugou, and most of them are assigned to Aboilinae. This paper is to report a new genus and three new species within this subfamily.

Material and methods

The specimens under study were collected from the Daohugou deposits, Inner Mongolia, China. They are preserved as impressions on the surface of grey tuffaceous siltstones. The stratigraphy of this locality has been discussed in detail, and the Daohugou biota is considered here as Middle Jurassic in age (for details, see Chen *et al*., 2005; Wang *et al*., 2007).

A new venation nomenclature has been proposed by Béthoux & Nel (2001, 2002), but the venation nomenclature of Orthoptera is still under discussion (Béthoux, 2007; Rasnitsyn, 2007). We here follow the traditional terminologies (Sharov, 1968; Gorochov, 1995), And in this study, we use the following wing veins abbreviations: C, Costa; Sc, Subcosta; RA, Radius anterior; RS, Radial sector; M, Media; MA, Media anterior; MP, Media posterior; Cu, Cubitus; CuA, Cubitus anterior; CuP, Cubitus posterior; A, analis; and 1A, first anal vein.

The venation patterns were drawn with a stereomicroscope (Nikon SMZ1000) and camera lucida, directly

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