



***Abrotoxyela* gen. nov. (Insecta, Hymenoptera, Xyelidae) from the Middle Jurassic of Inner Mongolia, China**

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Abstract

Abrotoxyela gen. nov. of Xyelidae and *Abrotoxyela lepida* sp. nov. and *Abrotoxyela multiciliata* sp. nov. are described from the Middle Jurassic Jiulongshan Formation of Daohugou Village, Inner Mongolia, China. The new genus is established on basis of the triple-branched vein Sc of the fore wing with first branch intersecting C at nearly 1/4 of its length; Sc terminates at C distal to the origin of Rs; and basal section of Rs approximately as long as that of M.

Key words: Macroxyelinae, new genus, new species, Jiulongshan Formation, China

Introduction

The oldest representatives of the family Xyelidae are known from the Triassic deposits of Australia, South Africa and Kyrgyzstan (Riek, 1955; Rasnitsyn, 1969, 1980; Schlüter, 2000), and these Triassic fossils are also the oldest representation of Hymenoptera. This family can be divided into 4 subfamilies including more than 40 genera in the Mesozoic and Cenozoic (Rasnitsyn, 1966, 1969, 1980; Abe & Smith, 1991; Ren *et al.*, 1995).

Recently we collected two nearly complete fossil specimens of Xyelidae from the Jiulongshan Formation near Daohugou Village, about 80 km south to Chifeng City of Inner Mongolia, China. Based on these specimens, a new genus *Abrotoxyela* with two new species is described, which adds considerably to our knowledge of the Xyelidae in the Middle Jurassic of northeastern China.

The Middle Jurassic strata in the Daohugou area of Inner Mongolia are well developed with rich fossil insects (Huang *et al.*, 2007; Liu *et al.*, 2007; Wang *et al.*, 2007; Yao *et al.*, 2007). The paleoenvironment reconstructed was a volcanic region with mountains, streams and lakes, which indicated a humid and warm-temperate climate (Ren *et al.*, 2002; Tan & Ren, 2002; Gao & Ren, 2006).

Material and methods

These specimens were examined under a Leica MZ 12.5 dissecting microscope and illustrated with the aid of Camera Lucida attached to the microscope. The figures were drawn using Adobe Illustrator CS2 and Adobe Photoshop CS2.

All these specimens are housed in the Key Lab of Insect Evolution & Environmental Changes, College of Life Science, Capital Normal University, Beijing, China. The wing venation nomenclature used in this paper is based on the interpretation of Huber and Sharkey (Huber & Sharkey, 1993).