

Limoniidae (Diptera) in the Upper Jurassic of Shar Teg, Mongolia

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Abstract

A diverse Late Jurassic crane fly assemblage is described from Shar Teg locality (SW Mongolia), viz. *Architipula krzeminskii* n.sp., *A. ampla* n.sp., *Mesotipula sigmoidea* n.sp., ?*M. brevicella* n.sp., *M. (Metatipula)* n.subgen.) *continens* n.sp., *Tipunia undata* n.sp., *T. jorgi* n.sp., *Cretolimonia jurassica* n.sp., *C. pygmaea* n. sp., *Eotipulina sharategica* n.sp., *E. paula* n.sp., *E. evidens* n.sp. and *Eotipuloptera* sp. The genus *Praearchitipula* Kalugina, 1985 is transferred to Pediciidae; it is the first Mesozoic record of this family (Middle Jurassic of Siberia). One species originally included in *Praearchitipula* is transferred to *Mesotipula*: *M. parvula* (Kalugina, 1985) n.comb. from the Middle Jurassic of Siberia.

Key words: Diptera, Limoniidae, Pediciidae, fossil, new species, Mongolia, Upper Jurassic

Introduction

The Limoniidae known since the Triassic is the most ancient living family of the order Diptera. The family affinity of the oldest find of Tipulomorpha from the Anisian Grès à Voltzia (Middle Triassic) in France is debatable: *Archilimonia* Krzemiński & Krzemińska, 2003 was described as a member of extinct Archilimoniidae (Krzemiński & Krzemińska 2003), but other authors mentioned it as Limoniidae without any discussion (Blagoderov et al. 2007). Anyway *Mabelysia* Shcherbakov, 1995 from the Ladian-Carnian Madygen Formation in Kyrgyzstan is a limoniid without doubt (Shcherbakov et al. 1995). The Limoniidae are described from Mesozoic deposits of all continents except for Antarctica: the most numerous and diverse finds are known from Eurasia (review see in Evenhuis 1994, review of subsequent finds in Cretaceous ambers see in Perrichot et al. 2007), rare specimens are described from Africa (Rayner & Waters 1990), North America (Krzemiński & Teskey 1987; Krzemiński 1992; Blagoderov et al. 2007) and South America (Ribeiro & Martins-Neto 1999; Ribeiro & Krzemiński 2000) and recorded from Australia (Jell & Duncan 1986).

Only two extinct subfamilies Architipulinae and Eotipulinae are recorded from the Jurassic beds, mainly based on isolated wings. The type genera of these subfamilies, *Architipula* Handlirsch, 1906 and *Eotipula* Handlirsch, 1906 were described from the Liassic of Germany (Toarcian of Dobbartin locality) together with other genera of crane flies as members of an extinct family Architipulidae Handlirsch, 1906 (Handlirsch 1906, 1939). Later the rank of this taxon was lowered to a subfamily in Limoniidae and the subfamily Eotipulinae was created (Kalugina in Kalugina & Kovalev 1985). Most of genera and species established by Handlirsch have never been revised, as well as the taxa described by Tillyard (1933), Bode (1953) and Rohdendorf (1961, 1962, 1964). Carpenter (1992) synonymized (without revision of the types) *Protipula* Handlirsch, 1906, *Mesotipula* Handlirsch,