



New species of *Nymphites* Haase (Neuroptera: Nymphidae) from the Middle Jurassic of China, with a redescription of the type species of the genus

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Abstract

Nymphites priscus (Weyenbergh, 1869) from the Late Jurassic of Solnhofen (Germany), type species of the genus *Nymphites* Haase, 1890, is redescribed. The genus is assigned to the Nymphidae. The taxon Nymphitidae is not valid; it is an artificial aggregation of fossil genera. Two species new to science, one named, of *Nymphites* from the Middle Jurassic locality of Daohugou (Inner Mongolia, China) are described.

Key words: Nymphidae, Nymphitidae, *Nymphites*, Middle Jurassic, Daohugou, China

Introduction

Extant Nymphidae is a small family with 35 species assigned to eight genera. They are restricted to the Australian and Oriental Regions, appearing to be most diverse in Australia (New 2003), where seven genera with about 26 species have been described (New 1982, 1986; Oswald 1997, 1998). Only three genera of the family are known in the rest of its range: *Umbranymphe* New, 1988, endemic to New Guinea (New 1988); *Osmylops* Banks, 1913, also known from New Guinea with three species (New 1985; Oswald 1998); and *Myiodactylus* Brauer, 1866, the most widely distributed nymphid genus, known from Philippines, New Guinea and Indonesia, besides Australia (New 2003).

The extant taxa are divided into two groups (New 1984). The first includes *Myiodactylus*, *Osmylops*, *Nymphydron* Banks, 1913, *Norfolius* Navás, 1922 and *Umbranymphe*, which are characterized by more rounded wings, broad costal space, and legs lacking tibial spurs. These genera were at times considered as a separate family, Myiodactylidae, by early authors (Handlirsch 1906–1908; Withycombe 1925; Tillyard 1926). The second group includes *Nymphes* Leach, 1814, *Austronymphe* Esben-Petersen, 1914 and *Nesydrion* Gerstaecker, 1885, which comprise the former family Nymphidae *sensu stricto*. These share elongate wings, the presence of tibial spurs, and a well-developed CuA space with numerous cells (New 1984).

Twelve fossil genera and 18 fossil species (including one belonging to the extant genus *Nymphes*) are currently considered as belonging to Nymphidae (Table 1). The oldest known nymphids are from the Middle Jurassic of China, including *Liminymphe makarkini* Ren et Engel, 2007 and two new species of the genus *Nymphites* Haase, 1890, described herein. *Nymphites priscus* (Weyenbergh, 1869) is the type species of the genus *Nymphites* and consequently of the extinct family Nymphitidae. This family was established by Handlirsch (1906–1908). Up to now it has been treated in this fashion, as a separate taxon, by many authors (e.g., Grimaldi 2000; Ren 2002; Ponomarenko 2002, 2003; Grimaldi & Engel 2005; Martins-Neto 2005; Jepson & Penney 2007; Engel et al. 2011). However, the current description of this species is inadequate, leaving the actual status of the family unclear (Makarkin & Archibald 2003).