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First record of the family Ithonidae (Neuroptera) from Baltic amber

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Abstract

Elektrithone expectata **gen. et sp. nov.** (Neuroptera: Ithonidae) is described from Eocene Baltic amber and represents the first record of this family from Baltic amber. The forewing venation of the new genus is characterized by a small number of crossveins as found in some ‘polystoechotid’-like genera, and by the absence of the distal nygma and the strong reduction of the anal area which are characteristic of ‘rapismatid’-like ithonids.

Key words: Neuroptera, Ithonidae, Baltic amber

Introduction

Although Neuroptera in Baltic amber are less than 0.1% of inclusions (Hoffeins & Hoffeins 2004), these include 28 described species of 13 extant families. In terms of numbers of specimens, Nevrothidae clearly dominate the assemblage (more than 50%; TW, pers. obs.); Coniopterygidae and Hemerobiidae are relatively common; Psychopsidae, Osmylidae, Sisyridae and Berothidae (including Rhachiberothinae) are rather rare; Chrysopidae, Nymphidae and Ascalaphidae are very rare; and only one or two specimens of the families Dilaridae, Mantispidae and Ithonidae (present paper) have been found (MacLeod 1971; Ohm 1995; Weitschat & Wichard 1998; Engel 1999; Archibald *et al.* 2009; Wichard *et al.* 2009, 2010; Makarkin & Kupryjanowicz 2011; Ohl 2011; Makarkin *et al.* 2012; Wedmann *et al.* 2013). Of the extant families of Neuroptera, only confirmed records of Myrmeleontidae and Nemopteridae are as yet absent from Baltic amber.

In this paper, we describe the first ithonid genus from Baltic amber based on a single specimen. At present, the relict family Ithonidae (s.l.) comprises 10 genera (41 species) formerly attributed to Ithonidae (s. str.), Polystoechotidae and Rapismatidae (Winterton & Makarkin 2010; Oswald 2013). The family is distributed in Australia, the mountains of the Oriental Region, southern North America to Meso-America and Chile; an exception is *Polystoechotes punctatus* (Fabricius, 1793), which is widely distributed in America, from southern Canada to Panama.

Thirty-one fossil species (25 of which are named) are known from the Early Jurassic to the late Eocene (Table 1). There are also numerous undescribed taxa from the Jurassic and Cretaceous of China, Kazakhstan and Russia (VM, pers. obs.).

All Cenozoic records of Ithonidae are restricted to the Eocene. Of these, 16 species are known from the early Eocene of western North America (Canada and U.S.A.) and Denmark. They belong to ‘polystoechotid-like’ genera (Andersen 2001; Archibald & Makarkin 2006) except for one ‘rapismatid-like’ genus described from Republic, Washington, U.S.A. (Makarkin & Archibald 2009). One poorly preserved species is described from the late Eocene of Florissant, Colorado, U.S.A. (Cockerell 1908; Archibald & Makarkin 2006); and we add another late Eocene species from Baltic amber.

determine its phylogenetic position within Ithonidae. The genus is remarkable for a mixture of character conditions otherwise found in ‘polystoechotid’-like and ‘rapismatid’-like genera. Both these groups belong to a clade that is sister to a clade comprising all extant Australian genera (Winterton & Makarkin 2010: Fig. 4), corresponding to the ‘ithone’-like genera (e.g., *Ithone* Newman, 1838, *Varnia* Walker, 1860, and *Megalithone* Riek, 1974).

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