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Description of *Leptoomus janzeni*, n. gen. and n. sp. (Hymenoptera: Chalcidoidea) from Baltic amber, and discussion of its relationships and classification relative to Eupelmidae, Tanaostigmatidae and Encyrtidae

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Abstract

Leptoomus janzeni, **n. gen.** and **n. sp.**, is described from 5 females and 2 males in 7 pieces of Baltic amber. An enlarged acropleuron forming the entire mesopleuron places the taxon within Eupelmidae, Tanaostigmatidae or Encyrtidae (Chalcidoidea), but it has a unique combination of features that differentiates it from extant members of these families. Its structural features are compared with those that characterize the three families and it is postulated to be the sister group of Tanaostigmatidae *sensu stricto* + (*Cynipencyrtus* + Encyrtidae) based on relative structure of its pronotum, prepectus and mesothoracic spiracle, and retention of two other putative symplesiomorphies, the presence of complete furrowlike notauli and a protibial apical spicule. Conflicting character states indicate other possible relationships, including a sister-group relationship with *Cynipencyrtus* + Encyrtidae based on transverse-triangular axillae and a flagellum having only seven funicular segments, or with Tanaostigmatidae *s. s.* based on presence of an externally visible prepectal pouch, or possibly forming a monophyletic group with Tanaostigmatidae *s. s.* + *Cynipencyrtus* based on combined acropleural-metacoxal structure. Several features support the monophyly of Tanaostigmatidae *s. s.*, that is excluding *Cynipencyrtus* and *Leptoomus*, but these two genera are both classified in Tanaostigmatidae *sensu lato* until relationships are resolved more conclusively. Features possessed by different members of Neanastatinae (Eupelmidae) suggest that this subfamily may be closely related to Tanaostigmatidae *s. l.* + Encyrtidae, but possible relationships of Tanaostigmatidae *s. s.* are also discussed if its enlarged acropleuron and other skeletomusculature features associated with jumping are convergent to similar features in the other taxa.

Key words: Neanastatinae, Calosotinae, Eupelminae, *Cynipencyrtus*

Introduction

Chalcidoidea (Hymenoptera) are classified into 19 extant families, of which Eupelmidae, Tanaostigmatidae and Encyrtidae are diagnosed partly by the presence of a greatly enlarged, convex acropleuron. Among these three families, apomorphic states have been proposed to support the monophyly of Tanaostigmatidae and Encyrtidae, but not Eupelmidae (Gibson *et al.* 1999). Tanaostigmatidae is the least speciose of the three families and one of the smaller families of Chalcidoidea. About 95 species are classified in 9 genera, of which 4 are monotypic (Noyes 2003). One of these, *Cynipencyrtus* Ishii (1928), was described originally in Encyrtidae but was transferred to Tanaostigmatidae by LaSalle and Noyes (1985) because of a single apomorphy, the presence of a large prepectus that is distinctly swollen anteriorly. However, relative prepectal-pronotal structure of *Cynipencyrtus* differs substantially from other Tanaostigmatidae and could represent an intermediate stage in the evolution of the prepectal-pronotal structure of Encyrtidae (Gibson 1989). *Cynipencyrtus flavus* Ishii is a parasitoid of several species of Cynipidae (Cynipoidea) that form galls on *Quercus serrata* Murray (Fagaceae) (Tachikawa 1973), whereas other tanaostigmatids are phytophagous, most of them being gall-

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