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Two new genera and species of Tingidae from Cretaceous amber from Myanmar (Burma) (Hemiptera: Heteroptera)

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Abstract

From the Upper Cretaceous Burmese amber, the first known genera of Tingidae, *Spinitingis* **n. gen.** and *Burmacader* **n. gen.** with the species *Spinitingis ellenbergeri* **n. sp.** and *Burmacader multivenosus* **n. sp.**, are described and figured. Their systematic placement and relationship to fossil and extant taxa are discussed.

Key words: Hemiptera, Heteroptera, Tingidae, fossil, new genus, new species, Burmese Amber, cretaceous

Résumé

Les premiers genres connus de Tingidaede l'ambre birman du Crétacé supérieur, en l'occurence *Spinitingis* **n. gen.** et *Burmacader* **n. gen.** avec l'espèce *Spinitingis ellenbergeri* **n. sp.** et *Burmacader multivenosus* **n. sp.** sont décrits et figurés. Leur placement systématique et leur relation avec les autres taxons fossiles et les taxons actuelles sont discutées.

Introduction

Significant new fossils are described here of the rare, enigmatic family of lace bugs, the Tingidae. About 2100 extant species of lace bugs are recognized, which have a worldwide distribution (Froeschner 1996). All tingids feed on plants, many on herbaceous plants, but also on the foliage of trees and shrubs (Schuh and Slater 1995).

Burmese amber inclusions now available for study contain two specimens of Tingidae, for which the new genera *Spinitingis* **n. gen.** and *Burmacader* **n. gen.** are erected. The genera are compared with related extant genera and described and illustrated below.

Burmacader multivenosus **n. gen.**, **n. sp.** is an unexpected discovery of a tingid taxon from the Oriental Region probably being the sister taxon of Vianaidinae . This would greatly expand the known distribution and cause biogeographic implications since the Vianaidinae Kormilev, sister group of all other Tinginae and Cantacaderinae, are neotropical and restricted to South America (e.g., Guilbert 2012). This emphasizes also the perils of biogeographic scenarios in the absence of fossil data,

The described amber specimens most probably originated from the Kachin State, a region of historical and currently active burmite mines (Cruikshank and Ko, 2003).

Modern information on the age of the strata bearing this amber, indicated an age of late Albian to Cenomanian, ca. 105–95 mya, based on palynology, an ammonite, and the insect taxa within Burmese amber (Cruikshank and Ko, 2003; Grimaldi *et al.* 2002). Most recently, the amber has been dated radiometrically to a maximum of 98.8 ± 0.62 mya (Albian-Cenomanian boundary), based on $^{206}Pb/^{238}U$ isotopes in magmatically derived zircon crystals taken from the sedimentary matrix surrounding the amber (Shi *et al.*, 2012). The fauna of insect inclusions is rather rich and several taxa of Heteroptera are described or reported so far from museums collections: Enicocephalidae

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and Carldrakeanini + Ceratocaderini in the Australian-New Zealand region (*vide* Guilbert 2012).

These hypotheses should be tested with a biogeographic analysis including this new taxon which is by far older than the known Cantacaderinae fossils.

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