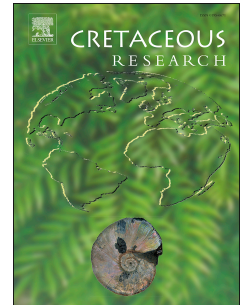


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1 Earwig nymphs (Dermaptera) from the mid-Cretaceous amber of Myanmar

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12 13 Abstract

14
15 Four new fossil earwig nymphs, *Hirtidiplatys cardiophyllus* gen. et sp. nov.,
16 *Acanthodiplatys leptocercus* gen. et sp. nov., and *Tytthodiplatys ortholabis* sp. nov. in
17 Diplatyidae, *Robustipygia calvata* gen. et sp. nov. in Pygidicranidae, and one
18 specimen unassigned to a genus which might belong to Anisolabididae, are described
19 and figured from the mid-Cretaceous amber of Myanmar. *Hirtidiplatys cardiophyllus*
20 gen. et sp. nov. and *A. leptocercus* gen. et sp. nov. represent the second and third
21 earliest records of Diplatyidae, and are distinguished from other recorded nymphs in
22 Cretaceous amber and modern lineages by the structure of their antennae and legs.

23
24 Keywords: Neodermaptera, Diplatyidae, Anisolabididae, Pygidicranidae,
25 Cenomanian.

26 27 1. Introduction

28
29 Dermaptera, commonly called earwigs, are certainly one of the small orders of
30 insects, including about 2,000 described species (Grimaldi & Engel, 2005). Earwigs
31 can be easily recognized by their forcep-like cerci. Although the earliest earwig
32 fossils are from the Late Triassic and Early Jurassic of England and Australia
33 (Jarzembowski, 1999; Wappler et al. 2005; Kelly et al. 2018). Recently, the record of
34 Dermaptera preserved in amber has grown rapidly (e.g., Ross & Engel, 2013; Engel &
35 Perrichot, 2014; Engel et al. 2011, 2015; Engel 2016, 2017), but most especially from
36 the mid-Cretaceous of Myanmar (Cockerell 1920; Engel & Grimaldi 2004, 2014;
37 Engel 2011; Ren et al. 2017). Up to date, 16 Cretaceous amber species of Dermaptera,
38 including seven nymphs, have been described (summary of nymphs provided in Table
39 1). As with many fossils of nymphal earwigs, it is challenging to determine the
40 taxonomic identity of such fossils with considerable confidence. Nonetheless, some
41 nymphs have been assigned to their respective families when pertinent characters
42 have presented themselves, particularly in later-stage instars, such as *Gallinympa*

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