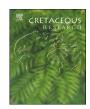
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Short communication

Burmochlus gen. nov., the first Cretaceous member of the Archaeochlus cluster (Diptera: Chironomidae: Podonominae)



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ABSTRACT

A fossil genus, Burmochlus gen. nov., with a species B. madmaxi sp. nov. (Diptera, Chironomidae, Podonominae) is described from mid-Cretaceous amber of northern Myanmar (~100 Ma). The adult male of the new species/genus displays an interesting wing structure with a trace of the vein R_{2+3} (or R_3 alone), the character unique in the subfamily Podonominae. The wing squama with a process bearing a bunch of setae, the wing membrane covered with bi- or trifid spinulae-like microtrichia, the gonostylus with a collar-like ring and a pear-shaped distal part, the robust anal point and the extensive superior volsella are also characters defined as exclusive for Burmochlus. The antenna, thorax and several hypopygium structures found in male Burmochlus clearly resemble those known from Archaeochlus Brundin, here defined as the closest relative, as well as from Afrochlus Freeman and Austrochlus Cranston - both previously referenced to or derived from Archaeochlus, hence being postulated as close or sister taxa. In a view of several hypotheses on the time of divergence of the Podonominae and other related subfamilies, this is the oldest fossil record of a true Podonominae chironomid based on definition of male characters, and dated back to the "mid-Cretaceous". Along with Furcobuchonomyia Baranov, Góral et Ross (Buchonomyiinae) and Myanmaro Giłka, Makarchenko, Pankowski et Zakrzewska (Orthocladiinae), Burmochlus is the third genus described from Burmese amber, and the first known Podonominae chironomid described from this deposit.

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1. Introduction

According to the most recently updated checklist by Ross (2019), 1,117 species of arthropods in 814 genera, 488 families and 67 orders were recorded in Burmese amber. Insects, as the most diverse group, are represented by 29 orders, 363 families, 646 genera and 823 species, including Diptera with 143 species, 110 genera and 49 families (Ross, 2019). The Chironomidae, one of the most speciesrich dipteran families, however, is known only from three species described from this deposit until now. They are placed in the subfamily Buchonomyiinae and the genus *Furcobuchonomyia* Baranov, Góral *et* Ross, 2017 (Baranov et al., 2017; Giłka and Zakrzewska, 2017), and in the subfamily Orthocladiinae and the genus *Myanmaro* Giłka, Makarchenko, Pankowski *et* Zakrzewska, 2019 (Giłka et al., 2019). The new genus *Burmochlus* is thus the first

representative of the chironomid subfamily Podonominae found in mid-Cretaceous Burmese amber.

In a view of several hypotheses on the time of divergence of the subfamily Podonominae (estimated from the Jurassic to the Cenozoic) (Kalugina and Kovalev, 1985; Veltz et al., 2007; Azar et al., 2008; Azar and Nel, 2010; Cranston et al., 2012), often difficult to separate from fossil chironomids of other related subfamilies, e.g. the Tanypodinae, and therefore referred to as "Podonominae or Tanypodinae" (e.g. Lukashevich and Przhiboro, 2018), an aim of our study is to evidence that true Podonominae existed in the Cretaceous.

2. Material and methods

2.1. Origin, processing and deposition of the type material

The specimen examined (Fig. 1A) is the inclusion preserved in Burmese amber, often referred to as "Burmite", mined in the

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