

# The earliest oxyteline rove beetle in amber and its systematic implications (Coleoptera: Staphylinidae: Oxytelinae)



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## ABSTRACT

A new genus and species, *Prajna tianmiaoe* gen. & sp. nov., is described and figured based on a well-preserved individual in Cretaceous amber from northern Myanmar. *Prajna* is definitely placed in the extant tribe Thinobiini Sahlberg of the staphylinid subfamily Oxytelinae Fleming based on its mostly convergent gular sutures, distinctly delimited and constricted neck, subulate maxillary palpi 4, stylus-bearing sternite IX in females, closely situated mesocoxae, spineless tibiae, 3-3-3 tarsal formula with strongly compressed basal two tarsomeres and with lobes on tarsomere 2, and typical Thinobiini-like pubescence. *Prajna* is separated from other allied genera by the depressions on the head, complete epistomal suture, slender maxillary palpomere 3, subulate palpomere 4, and tri-sulcate pronotum. The new genus combines some key characters of both Oxytelini and Thinobiini, indicating the close relatedness of the two tribes.

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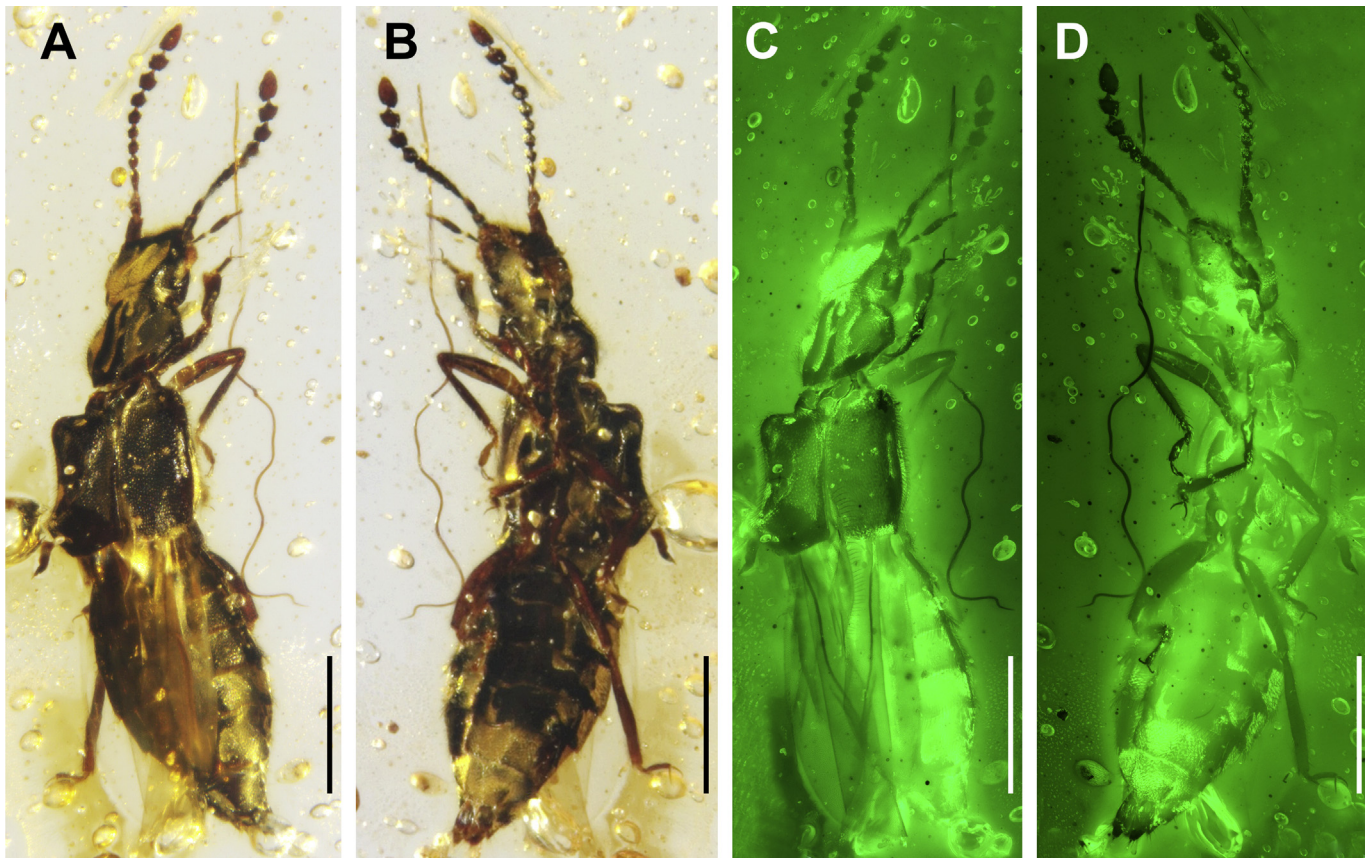
## 1. Introduction

Oxytelinae Fleming is a species-rich subfamily in Staphylinidae, consisting of more than 2000 extant species divided into 38 genera (Makranczy, 2006; Löbl and Löbl, 2015). Modern oxyteline rove beetles are commonly found and collected in various habitats (Makranczy, 2006; Lü and Zhou, 2012, 2015a, 2015b) and are widely distributed in all biogeographic regions except the Antarctic (Herman, 2001; Thayer, 2005). The “Oxytelinae” used to be a large subfamily, including, beside the “Oxytelini”, at least eight “tribes” that are treated as subfamilies today (Sharp, 1887; Bernhauer and Schubert, 1911; Cameron, 1930; Scheerpeltz, 1933). After Blackwelder (1942, 1943), the “Oxytelinae” shrank to the circumscription near modern Oxytelinae. Finally, the components of Oxytelinae were fixed by Herman (1970)’s definition of a

combination of the following characters: 1) presence of the abdominal sternite II (well-developed or poorly sclerotized) without mid-longitudinal carina; 2) distinct openings of the abdominal glands in tergite IX or in the connecting membranous sulcus between IX and X, and 3) tergite IX entirely or mostly separated by tergite X. However, the tribal classification of the modern Oxytelinae varies more frequently. The earliest subdivision of oxyteline beetles dates back to Erichson (1840), but among his four tribes, only two remain in the modern Oxytelinae: “Oxytelini genuine” and Coprophilini Heer. In the *Coleopterorum Catalogus* and its supplementary edition, a four-subtribe system (ranked as Oxytelini and including only groups in modern Oxytelinae) was established by Bernhauer and Schubert (1911) and Scheerpeltz (1933). Herman (1970) re-applied the two-tribal system in Erichson (1840) in the Oxytelinae of the modern concept and assigned genera in the light of a phylogenetic study. This classification was later followed by Newton and Thayer (1992). The latest world catalogue of Staphylinidae (Herman, 2001) and the first edition of *Catalogue of Palaearctic Coleoptera* (Löbl and Smetana, 2004) used another four-tribal system: Coprophilini, Deleasterini

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**Fig. 1.** Habitus of holotype (NIGP164467). A, dorsal view, under normal reflected light; B, ventral view, under normal reflected light; C, dorsal view under green fluorescence; D, ventral view under green fluorescence. Scale bars: 0.5 mm. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Reitter, Oxytelini, and Thinobiini Sahlberg. A five-tribal system was provided by [Gildenkov \(2003\)](#). Three years later, another recent five-tribal system was constructed according to a phylogeny using 70 characters including genital traits: Corprophilini, Euphaniini Reitter (or Deleasteriini), Oxytelini (embracing the former Oxytelini and Thinobiini), Blediini [Ádám](#), and Planeustomini [Jacquelin du Val \(Makranczy, 2006; Bouchard et al., 2011\)](#). [Khachikov \(2012\)](#) separated Oxytelinae into eight tribes, which was selectively accepted by the newest edition of *Catalogue of Palaearctic Coleoptera (Löbl and Löbl, 2015)*. In this system, the Euphaniini was divided into Euphaniini, Deleasteriini, and Syntomiini [Böving & Craighead](#), the broader Oxytelini in [Makranczy \(2006\)](#) split again into Oxytelini and Thinobiini that both contained different generic components from those in [Herman \(2001\)](#).

Fossils may bear the characters or the states of characters that are unknown or absent in extant species, which give new insights into the assessment of characters and thus aid in the construction of phylogeny and high-level classification. Before this study, a total of 31 fossil species (in 14 genera) had been described in Oxytelinae ([Table 1](#)). Among them, only one Miocene species, *Dolichoxenus newtoni* [Engel and Chatzimanolis, 2009](#) is described based on an amber inclusion. Here we describe a new species preserved in Cretaceous Burmese amber. It represents the oldest record of the subfamily Oxytelinae in amber. Because the new species cannot be assigned to any known extant or extinct genus, a new genus is established to accommodate this species. In this paper, we discuss the systematic placement in the frame of the latest eight-tribal classification ([Löbl and Löbl, 2015](#)), although it was not based on a reliable phylogenetic analysis.

## 2. Material and methods

The material described here is from amber deposits in the Hukawng Valley of northern Myanmar. The mining is undertaken at a hill named Noije Bum near Tanai Village ([Grimaldi et al., 2002; Cruickshank and Ko, 2003](#)). Observations, measurements, and photographs were taken using a Zeiss Discovery V20 stereo microscope with AxioCam MRc 5 camera attached. Photomicrographs with green background were taken using green fluorescence as a light source attached to the microscope. Some photographs were taken using a Zeiss Axio Zoom V16 microscope with AxioCam MRc 5 camera. The material has been prepared, cut with a razor blade and polished with sand papers and diatomite paste. A polished slab of amber measuring 12 mm × 6 mm contains the beetle specimen, which (in dorsal view) is oriented at approximately a 45° angle to the surface.

## 3. Systematic palaeontology

Order Coleoptera [Linné, 1758](#)  
 Family Staphylinidae [Latreille, 1802](#)  
 Subfamily Oxytelinae [Fleming, 1821](#)  
 Tribe Thinobiini [Sahlberg, 1876](#)

Genus *Prajna* gen. nov.

Type species: *Prajna tianmiaoe* sp. nov., by monotypy.

### Etymology

The genus name is a Sanskrit word “प्रज्ञा” (“*prajñā*”, feminine singular nominative), meaning “insight” or “wisdom”.

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