

ORIGINAL RESEARCH



A New Species of the Genus *Amberophytum* Yu, Slipinski et Pang, 2019 (Coleoptera: Cerophytidae) from mid-Cretaceous Burmese Amber

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ABSTRACT

This article describes and illustrates a new species of the genus *Amberophytum* Yu, Slipinski et Pang, 2019 of the family Cerophytidae from mid-Cretaceous Burmese Amber. The new species, *A. maculatum* s.n. differs from *A. birmanicum* Yu, Slipinski et Pang, 2019 in the smaller body size, shorter metatarsomere 1, and more convex body. A key to the species of the genus *Amberophytum* is presented.

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Introduction

The family Cerophytidae is a small relict group represented in the Recent fauna by more than twenty species from four genera (Costa *et al.*, 2003, 2014; Kundrata, Jäch, 2017). Almost twenty fossil species are known (Martynov, 1926; Dolin, 1973; Zherichin, 1977; Dolin *et al.*, 1980; Hong & Wang, 1990; Chang *et al.*, 2011a, 2011b; Oberprieler *et al.*, 2016; Yu *et al.*, 2019). The oldest record was from the Middle-Upper Jurassic of China (Yu *et al.*, 2019). Four species of four genera were described from mid-Cretaceous Burmese Amber (Yu *et al.*, 2019). A new species of the recently described genus *Amberophytum* Yu, Slipinski et Pang, 2019 is described below from Myanmar.

Materials and methods

Observations and photographs were made with a Leica-M165C binocular microscope, a Nikon SMZ-10 R stereoscopic microscope, and a Nikon Optiphot compound microscope with magnifications up to 800 X. Helicon Focus Pro X64 was used to stack photos for better depth of field.

Concerning the age, the Amber originated from mines in the Hukawng Valley, Myitkyina District, Kachin State, Myanmar. Burmite is found in sedimentary facies, greenish-grey shale layers interbedded in other sedimentary rocks like sand- and siltstones, micritic limestone and various organic materials, as well as thin layers of coal and Amber bearing shale layers (Ross *et al.*, 2000; Zherikhin & Ross, 2000; Cruickshank & Ko,

2003; Kyaw & Khin, 2017). Based on radiometric data, Burmese Amber from this location is currently dated back to the earliest Cenomanian, mid-Cretaceous, with an age of 98.79 ± 0.62 Ma (Shi *et al.*, 2012).

The terminology used in the descriptions is based on the study by Lawrence *et al.* (2010). Synclusion consists of an insect so closely appressed to the beetle that it could not be further identified. Nomenclatural acts introduced in the present work are registered in ZooBank (www.zoobank.org) under LSID urn:lsid:zoobank.org:pub:??.

Results

Systematic palaeontology

Order Coleoptera Linnaeus 1758

Suborder Polyphaga Emery 1886

Superfamily Elateroidea Leach, 1815

Family Cerophytidae Latreille, 1834

Genus *Amberophytum* Yu, Slipinski et Pang, 2019

Amberophytum maculatum n. sp. (Figure 1)

LSID Zoobank: urn:??

Etymology: The specific epithet is from the Latin “maculo” = spotted, in reference to the roundish, reddish-yellow spots on the elytra of the fossil.

Type material: Holotype deposited in the Poinar amber collection (PACO) housed at Oregon State University under accession # B-C-45.

Type locality: Hukawng Valley southwest of Maingkhwan in Kachin State (26°20'N, 96°36'E), Myanmar, early Cenomanian (mid-Cretaceous).

Description: Body length 1.9 mm, depressed, yellowish-brown; elytra covered with roundish, reddish-yellow spots and short decumbent setae.

Head: Head hypognathous, almost concealed by pronotum. Mandibles tridentate, with another small tooth at the end, quadrate with two large and two small teeth. Labrum quadrate. Eyes large, globular, strongly convex, finely faceted.

Interocular distance is 1.5 times as long as the eye. Forehead convex. Antennal insertions are moderately close together. Antennal sockets are closely placed. Distance between them is four times shorter than the length of antennomere 1. Antennae 11-segmented, almost reaching middle of elytra; antennomere 1 3.3 times as long as wide at apex; antennomere 2 3.2 times as long as wide at apex, 0.6 times as long as and 0.6 times as narrow as antennomere 1; antennomere 3 2.2 times as long as wide at apex, 0.6 times as long as and slightly more limited than antennomere 2; antennomere 4 1.9 times as long as wide at apex, 1.2 times as long as and 1.4 times as wide as antennomere 3; antennomere 5 2.7 times as long as wide at apex, 1.3 times as long as and 0.7 times as narrow as antennomere 4; antennomere 6 2.8 times as long as wide at apex, equal in length and narrower than antennomere 5; antennomere 7 3.7 times as long as wide at apex, 1.2 times as long as and 0.9 times as narrow as antennomere 6; antennomere 8 3.6 times as long as wide at apex, slightly shorter and equal in width to antennomere 7; antennomere 9 1.9 times as long as wide at apex, 1.1 times as long as and 2.0 times as wide as antennomere 8; antennomere 10 2.1 times as long as wide at apex, 0.9 times as long as and 0.8 times as narrow as antennomere 9; antennomere 11 2.9 times as long as wide at apex, 1.4 times as long as and subequal in width to antennomere 10.

Pronotum: Pronotum broadly arcuate anteriorly, weakly transverse, 1.08 times as long as wide at apex, 0.76 as long as wide in the middle, 0.84 times as long as wide at base; apical margin finely serrate, disc weakly convex, covered with dense punctures; posterior angles short, broadly triangular, acute and not projecting laterally point. Lateral carina absent. Scutellum large, 0.85 times as long as wide at the base, bluntly cordiform.

Elytra: Elytra suboval, 1.83 times as long as wide at the base, 1.67 times as long as wide in the middle, 2.75 times as long as wide at apical fifth, 2.5 times as long as pronotum; humeri smoothed; apices largely rounded together; elytral striae distinct and impressed, with relatively rare rounded punctures; scutellar striole absent; interstriae flat, 2.7-3.3 times as wide as elytral striae, covered with fine and sparse punctures.

Thorax: Prosternal process distinct. Chin piece produced and truncated.

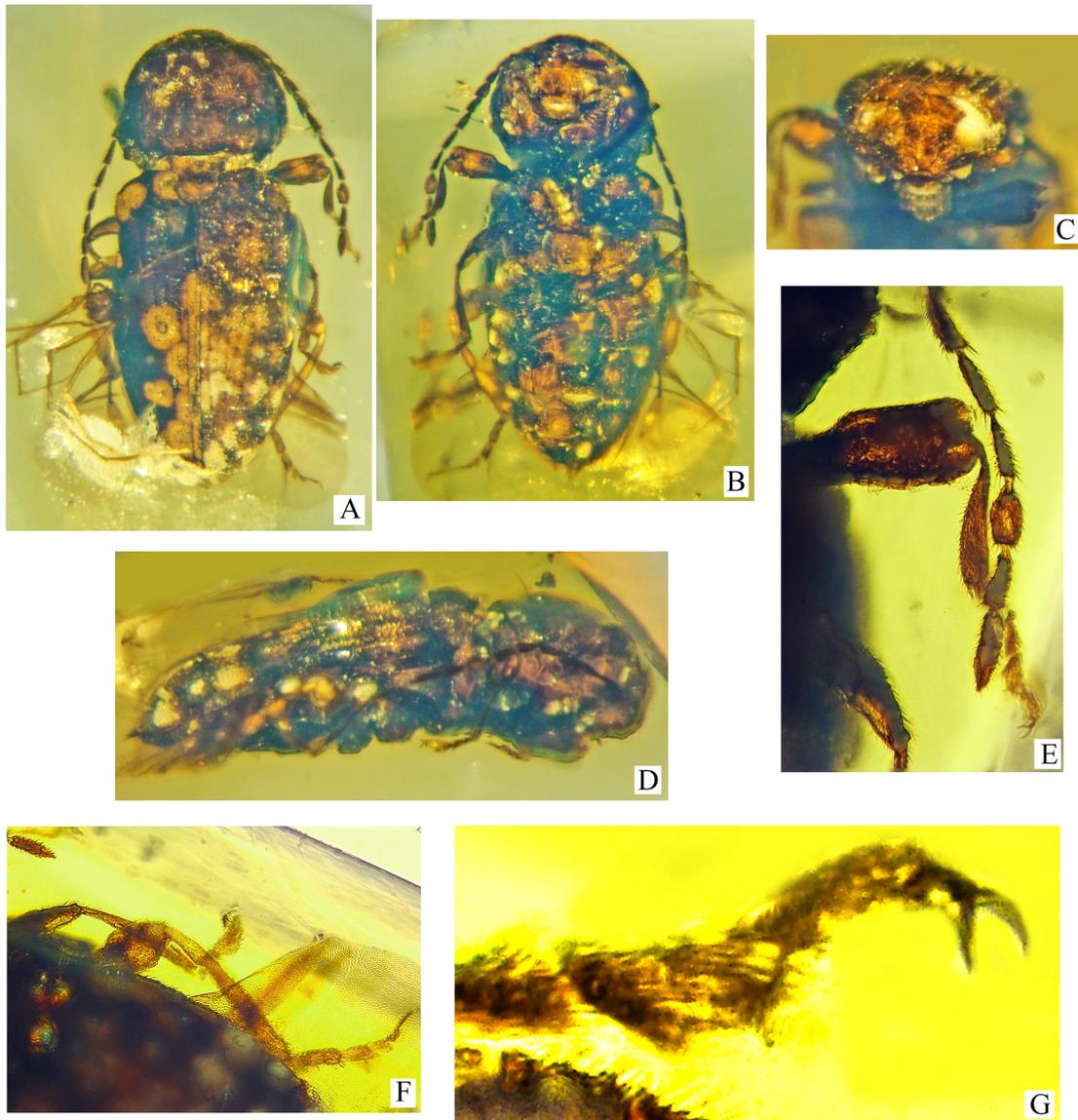


Figure 1. *Amberophytum maculatum* n. sp. **A.** Body, dorsal view. **B.** Body, ventral view. **C.** Body, frontal view. **D.** Body, lateral view. **E.** Antenna and foreleg. **F.** Meso- and meta legs. **G.** Mesotarsus.

Abdomen: Ventrites free. Ventrite 1 is slightly shorter than ventrite 2. Ventrites 2, 3 and 4 are subequal in length. Ventrite 5 is slightly longer than ventrite 4, rounded at apex.

Legs: Legs are relatively long. Metatrochanters long. Femora moderately widened. Tibiae narrow, long. Tarsi long-conical. Tarsomere 1 and 2 long. Tarsomere 2 is shorter than tarsomere 1. Tarsomere 3 is conical, shorter and slightly wider than tarsomere 2. Tarsomere 4 is bilobed, shorter and slightly narrower than tarsomere 3. Tarsomere 5 long with simple claws, without

teeth, not pectinate. Metatarsi: tarsomere 1 2.9 times as long as wide at apex; tarsomere 2 1.8 times as long as wide at apex, 0.6 times as long as and equal in width to tarsomere 1; tarsomere 3 1.2 times as long as wide at apex, 0.7 times as long as and 1.1 times as wide as tarsomere 2; tarsomere 4 subequal in length and width, about 0.6 times as long as and .8 times as narrow as tarsomere 3; tarsomere 5 8.0 times as long as wide at apex, 2.0 times as long as tarsomere 4.

Comparison: The new species differs from *Amberophytum birmanicum* Yu, Slipinski et

Pang, 2019 in the smaller body sizes, shorter metatarsomere 1, and more convex body.

Comments: Closely placed antennal sockets, long metatrochanters, distinct prosternal process, lateral pronotal carina absent suggest placement in the family Cerophytidae. Simple pretarsal claws, pronotum broadly arcuate anteriorly with the posterior pronotal angles broad, acute, and not projecting laterally point clearly to the genus *Amberophytum*.

Key to species of the genus *Amberophytum*

1. Metatarsomere 1 2.9 times as long as wide at apex. Body smaller (1.9 mm), more convex. *A. maculatum* n. sp.
2. Metatarsomere 1 5.5 times as long as wide at apex. Body larger (2.3 mm), more flattened. *A. birmanicum*

Discussion

In total, 362 species of 266 genera from 96 families of Coleoptera were described from Burmese Amber (Ross, 2021). Only five species (including the current record) of the Cerophytidae are known from this amber source. All these species are extinct, but two genera, *Brachycerophytum* Costa et al., 2003 and *Cerophytum* Latreille, 1806 out of the four known genera, are still present in the Recent fauna.

The reddish-yellow spots on the elytra of the specimen are pretty curious. They are of various sizes and appear to merge in some areas. It is unknown whether they are part of the genome and serve as a camouflage type or whether they result from some infectious agent.

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Conflict of interest statement

The authors declare no conflict of interest.

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