

## Two new genera and species of Dermestidae (Coleoptera) from Cretaceous Burmese amber

### Два новых рода и новый вид жуков-кожеедов (Coleoptera, Dermestidae) из мелового бирманского янтаря

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**Key words:** taxonomy, new genus, new species, new combination, Coleoptera, Dermestidae, Megatominae, *Tuberphradonoma*, *Cretomegatoma*, Cretaceous, Burmese amber.

**Ключевые слова:** таксономия, новый род, новый вид, новая комбинация названия, Coleoptera, Dermestidae, Megatominae, *Tuberphradonoma*, *Cretomegatoma*, мел, бирманский янтарь.

**Abstract.** Two new genera, *Tuberphradonoma* **gen.n.** and *Cretomegatoma* **gen.n.**, belonging to the family Dermestidae are described and illustrated from mid-Cretaceous (c. 99 million years old) amber from Kachin State, northern Myanmar, including one new species *Tuberphradonoma burmitica* **sp.n.** and one new combination *Cretomegatoma atypica* (Deng, Ślipiński, Ren et Pang, 2017), **comb.n.**

**Резюме.** В статье из среднемелового (около 99 миллионов лет) янтаря из штата Качин (север Мьянмы) описаны два новых рода жуков-кожеедов, *Tuberphradonoma* **gen.n.** и *Cretomegatoma* **gen.n.**, а также новый вид *Tuberphradonoma burmitica* **sp.n.** Установлена новая комбинация названия *Cretomegatoma atypica* (Deng, Ślipiński, Ren et Pang, 2017), **comb.n.**

### Introduction

The family Dermestidae (Coleoptera) currently contains about 1700 species and subspecies worldwide [Háva, 2015, 2021]. Specimens in Cretaceous Burmese amber are not very common. From Burmese amber there are seven known species belonging to five genera: *Attagenus* Latreille, 1802, *Cretoattagenus* Háva, 2020, *Creto-dermestest* Deng, Ślipiński, Ren et Pang, 2017, *Dermestest* Linnaeus, 1758 and *Megatoma* Herbst, 1791 [Cai et al., 2017; Deng et al., 2017; Háva, Damgaard, 2017; Háva, 2020]. Additionally, an undescribed larva was mentioned as *Trogoderma*-like [Poinar, Poinar, 2016; Peñalver et al., 2017]. Two new genera and a new species are newly described in the article.

### Material and Methods

The study is based on two specimens of Dermestidae embedded in the Burmese amber originating from the Hukawng Valley of northern Myanmar. The age of

the amber deposits is generally considered to be the earliest Cenomanian [Grimaldi et al., 2002] or possibly latest Albian [Ross et al., 2010]. The recently conducted UePb zircon dating restricted its age at  $98.79 \pm 0.62$  MY, which is equivalent to the Late Cretaceous [Shi et al., 2012]. Nomenclature and systematics used in the present paper follows Háva [2015, 2020] and Motyka et al. [2021].

Type specimens of the presently described species are provided with red, printed labels with the text as follows: «HOLOTYPE (or PARATYPE) *Tuberphradonoma* gen. nov. *burmitica* sp. nov. Jiří Háva det. 2021». Type material deposited in Jiří Háva, Private Entomological Laboratory and Collection, Prague-west, Czech Republic.

### Results

Megatominae

Megatomini

*Tuberphradonoma* Háva, **gen. n.**

**Type species:** *Tuberphradonoma burmitica* Háva, **sp.n.** by monotypy.

**Description.** Body length 2.07–2.52 mm, black, with black, long, erect setation dorsally. Antenna with 11 antennomeres and with 3-antennomered club. Antennal cavity closed. Ocellus very faintly visible. Elytra with large humeral bump. Prosternum with a collar. Anterior tarsomeres are short, middle and posterior tarsomeres relatively long.

**Differential diagnosis.** The new genus very externally similar to recent species *Phradonoma villosulum* species group belonged to genus *Phradonoma* Jacquelin du Val, 1859, but differs by the absent spines along shaft on anterior tibiae and very large elytral bump; from Burmese Cretaceous species *Megatoma atypica* Deng, Ślipiński, Ren et Pang, 2017 differs by the large humeral, elytral bumps, by the long erect black setation and by the structure of antennae.

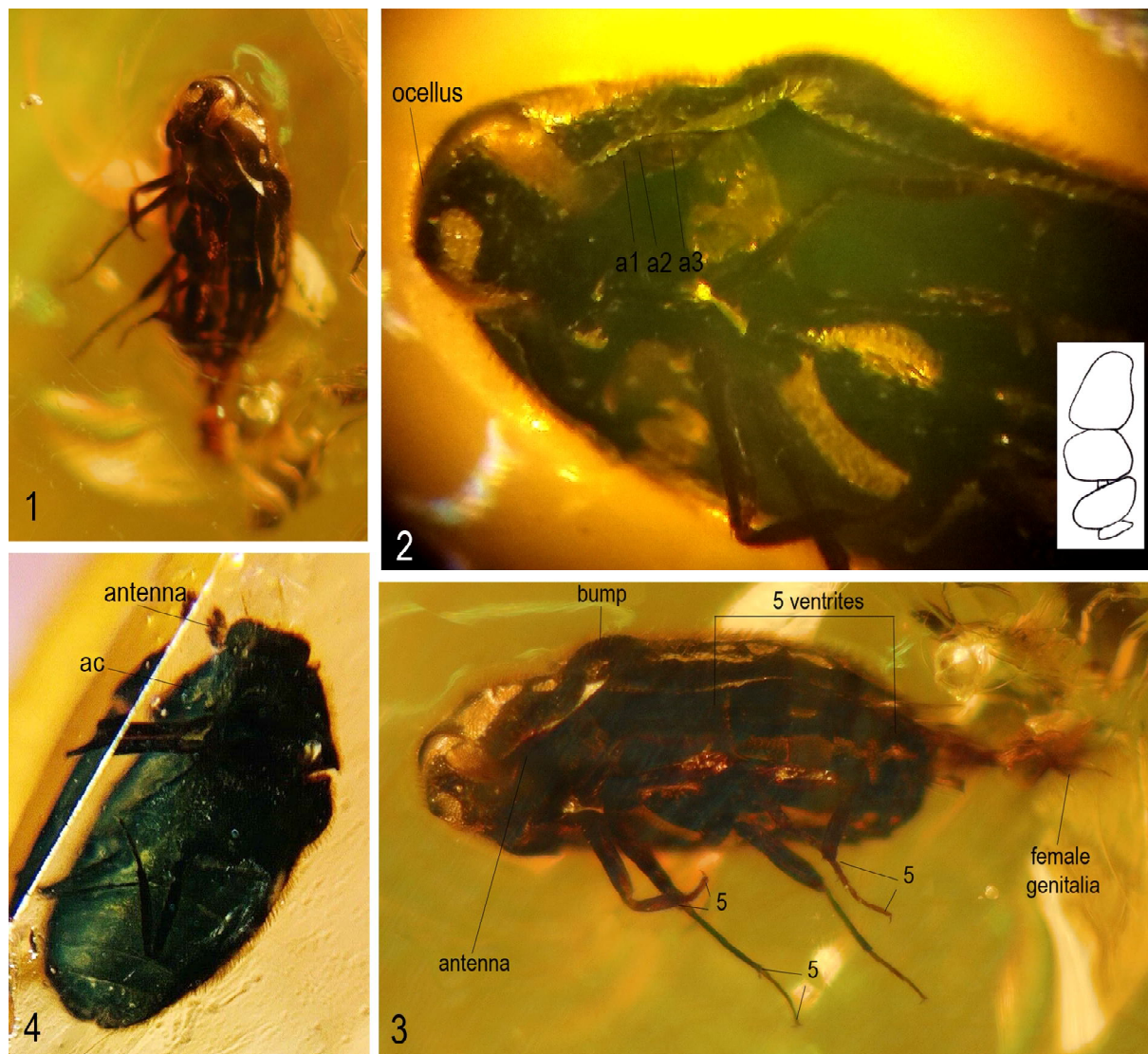
**Etymology.** Derived from a part of the Latin word «tuberculus», meaning elytral bumps, and name of the genus *Phradonoma*. Feminine gender.

*Tuberphradonoma burmitica* Háva, **sp. nov.**

Figs 1–4.

**Type material.** *Holotype* (♀): Myanmar, Hukawng Valley, lowermost Cenomanian. The complete beetle is included in a transparent amber piece, with dimensions of 14×7 mm. Syninclusions consist of five very small insects and numerous organic particles. *Paratype* (unsexed): Myanmar, Hukawng Valley, lowermost Cenomanian. The complete beetle is included in a transparent amber piece, with dimensions of 14×12 mm. Syninclusions consist of one specimen of Diptera and numerous organic particles.

**Description.** *Holotype*, female. Body black, oval. Body 2.25 mm length. Head finely punctuate, with short more or less decumbent black setae, maxillary palpi not visible, eyes large with microsetae, antennae dark brown with 11 antennomeres, club with 3 antennomeres (Fig. 2). Forehead with faintly visible ocellus. Pronotum entirely black, matte, sparsely and not very coarsely punctate, with erect, black setae. Lateral margins slightly visible from above. Two small depressions near scutellum. Antennal cavity closed. Scutellum small, black, triangular, without setation or punctures. Elytra black sparsely and coarsely punctate, covered by long, erect black setation. Each elytron with large humeral bump. The underside of the specimen coarsely and (especially the visible ventrite) more densely punctate than elytra and pronotum, covered with straight and decumbent black setae. Anterior



Figs 1–4. *Tuberphradonoma burmitica* sp.n.: 1 — holotype, habitus dorso-lateral; 2 — holotype, head, pronotum and antennal club, ventral (a1–a3 — antennomeres); 3 — holotype, habitus, dorso-lateral; 4 — paratype, dorsal (ac — antennal cavity).

Рис. 1–4. *Tuberphradonoma burmitica* sp.n.: 1 — голотип, внешний вид, дорсо-латерально; 2 — голотип, голова, переднеспинка и булава усиков, вентрально (a1–a3 — членики усиков); 3 — голотип, внешний вид, дорсо-латерально; 4 — паратип, дорсально (ac — усиковая впадина).

tarsomeres as short, middle and posterior tarsomeres relatively long. Tibiae and tarsi brown, femora anteriorly darkened and sparsely covered with fine brown setae, anterior tibiae without spines. Genitalia poorly visible.

**Variability.** Paratype 2.52 mm length. Body slightly deformed dorsally, antenna deformed and slightly compressed.

**Differential diagnosis.** See diagnosis of genus.

**Etymology.** The species name refers to its inclusion in Burmese amber.

### ***Cretomegatoma* Háva gen.n.**

**Type species:** *Megatoma atypica* Deng, Ślipiński, Ren et Pang, 2017.

*Cretomegatoma atypica* (Deng, Ślipiński, Ren et Pang, 2017), **comb. n.**

*Megatoma atypica* Deng, Ślipiński, Ren et Pang, 2017: 4.

**Material examined.** Myanmar, Hukawng Valley, lowermost Cenomanian, 2 spec., (JHAC).

**Description.** Body length 2.6mm, width 1.3mm. Body elongate oval about 2 times as long as wide, widest at base of elytra; vestiture of dense, mixed dark and light adpressed or strongly inclined setae. Antenna with 11 antennomeres (length 0.37 mm), club with 3 antennomeres; scape and pedicel subglobular, antennomeres 3–8 subequal, club almost as long as remaining antennomeres combined, relatively loose. Forehead with visible ocellus. Abdomen as long as wide, with five free ventrites; ventrite I slightly longer than ventrite II, ventrites I–IV gradually decreasing in length, ventrite V longer than IV and broadly rounded with a rectangular emargination apically.

**Differential diagnosis.** This species described as *Megatoma atypica*, but from genus *Megatoma* differs by the elongate oval body (*Megatoma* — body parallel elongate), not having visible scutellum (*Megatoma* — visible scutellum), small 3-antennomered club (*Megatoma* — terminal antennomere long), abdominal ventrite V longer than IV and broadly rounded with a rectangular emargination apically (*Megatoma* — abdominal ventrite V without emargination).

**Etymology.** The name is composed of the beginning of the word Cret- (cretaceous) and genus name *Megatoma*. Feminine gender.

## **List of Dermestidae known from Cretaceous Burmese amber**

Attageninae Laporte de Castelnau, 1840

Attagenini Laporte de Castelnau, 1840

***Attagenus*** Latreille, 1802

*Attagenus burmiticus* Cai, Háva et Huang, 2017

*Attagenus lundi* Háva et Damgaard, 2017

*Attagenus secundus* Deng, Ślipiński, Ren et Pang, 2017

***Cretoattagenus*** Háva, 2020

*Cretoattagenus coziki* Háva, 2020

Cretodermestini Deng, Ślipiński, Ren et Pang, 2017

***Cretodermestes*** Deng, Ślipiński, Ren et Pang, 2017

*Cretodermestes palpalis* Deng, Ślipiński, Ren et Pang, 2017

Dermestinae Latreille, 1804

Dermestini Latreille, 1804

***Dermestes*** Linnaeus, 1758

*Dermestes larvalis* Cockerell, 1917

Megatomiinae Leach, 1815

Megatomini Leach, 1815

***Cretomegatoma*** Háva, gen.n.

*Cretomegatoma atypica* (Deng, Ślipiński, Ren et Pang, 2017), **comb.n.**

***Tuberphradonoma*** Háva, gen.n.

*Tuberphradonoma burmitica* Háva, sp.n.

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