

New Species of Late Eocene Dermestid Beetles (Coleoptera, Dermestidae) from the Rovno and Baltic Ambers

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Abstract—Fossil beetles of the family Dermestidae are reviewed. Three new species are described: *Dermestes progenitor* and *Megatoma electra* from the Baltic amber and *Dermestes vetustus* from the Rovno amber (Late Eocene).

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Key words: Coleoptera, Dermestidae, Eocene, Baltic, Rovno amber, new species.

INTRODUCTION

Dermestid beetles are relatively rare amongst fossil coleopterans. The oldest representatives of this family are known from the Lower Cretaceous (Crowson, 1981). A larva of *Dermestes* was described from the Upper Cretaceous Burmese amber (Cockerell, 1917). All other records are from Cenozoic deposits. Most of them have resulted from the study of the Late Eocene Baltic amber; however, they have all been identified only to the generic level: *Dermestes*, *Attagenus*, *Megatoma*, *Globicornis*, *Trogoderma*, *Anthrenus*, and *Trinodes* (Klebs, 1910; Larsson, 1978; Hiecke and Pietrzniuk, 1984). Other Eocene deposits yielded one *Dermestes* species, one *Orphilus* species, and two *Attagenus* species (Scudder, 1900; Wickham, 1912, 1913). One *Dermestes* species (Heer, 1847) and a monotypic genus, *Microcryptorhopalum* (Pierce, 1960), were described from the Miocene; and one *Attagenus* species, from the Oligocene (Heyden and Heyden, 1865). In addition, one *Cryptorhopalum* species was found in the Miocene Mexican amber (Beal, 1972), and one *Attagenus* species, three *Cryptorhopalum* species and a new genus, *Amberoderma*, were discovered in Dominican amber (Háva and Prokop, 2004). The *Attagenus* sp. (Wappler, 2003) that was recently described from the Eocene of Germany is not a member of the Dermestidae. According to Ponomarenko (pers. comm.), the Triassic genera *Reeveana* and *Tryoniopsis* (Dunstan, 1923) also cannot be referred to this family.

MATERIAL

We have examined Rovno amber from the collection of the Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine (SIZC) and Baltic amber from the collection of the Humboldt Natural History Museum, Berlin, and C. Gröhn's collection, Glinde.

The Rovno amber was collected at the Klesov (over half of the inclusions), Dubrovitsa, and Vladimirets outcrops, which constitute part of a vast area of amber-bearing deposits in the north of the Rovno and Zhitomir Regions within Ukrainian Polissya (the Pripet Marshes) (Perkovsky et al., 2003a). Geological and paleontological data suggest a Late Eocene age for the Rovno amber (Perkovsky et al., 2003b).

SYSTEMATIC PALEONTOLOGY

Family Dermestidae Latreille, 1807

Genus *Dermestes* Linnaeus, 1758

Subgenus *Dermestes* s. str.

Dermestes progenitor Zhantiev, sp. nov.

E t y m o l o g y. From the Latin *progenitor* (ancestor).

H o l o t y p e. Humboldt Natural History Museum, Berlin, no. 849; Baltic amber; Late Eocene.

D e s c r i p t i o n (Fig. 1). Female. The body is elongate, parallel-sided, moderately convex (Fig. 1a). The cuticle is black and shiny. The upper side is covered with short recumbent hairs, the lower side is covered with thinner and denser recumbent hairs, which do not hide the cuticle. The antennal club is shown in Fig. 1b. The pronotum is transverse (Fig. 1a), its maximum width near its base is 1.7 times as great as its length. Its lateral and rear margins are thinly bordered. The surface is evenly punctured, the distance between punctures is 2–3 times as great as their diameter. The scutellum is as in Fig. 1a. The elytra are parallel-sided, each elytron evenly and roundly narrowing toward the apex in its posterior third. The elytra are almost twice as long as their combined widths and 3.5 times as long as the pronotum. Longitudinal striae are absent, the surface is evenly punctured, punctures are larger than those on the pronotum, the distance between the punctures is

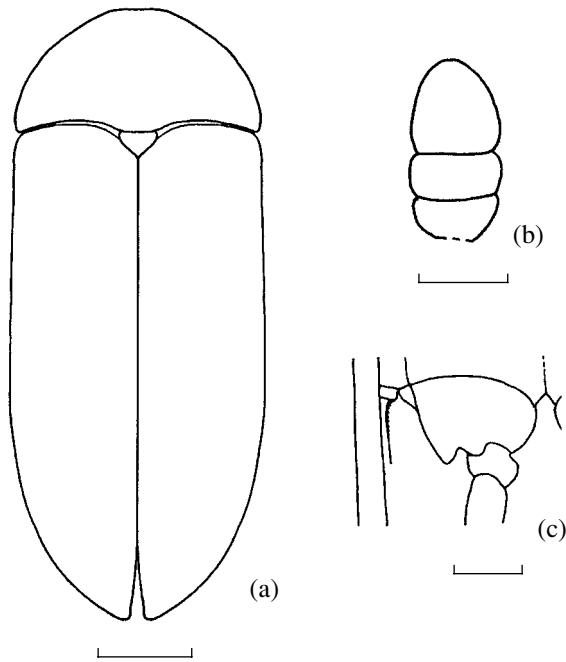


Fig. 1. *Dermestes progenitor* sp. nov., holotype, no. 849: (a) body outline, (b) antennal club, and (c) hind coxa. Scale bar 1 mm in Fig. 1a, 0.2 mm in Fig. 1b, and 0.5 mm in Fig. 1c.

1.5–2 times as great as their diameter. The prosternum is flattened, without the medial keel. The mesosternum is relatively broad, 1.9 times as long as wide. The posterior margin of the metepimeron is straight or slightly rounded. The hind coxa is elongate, 0.77 times as long as its maximum width (Fig. 1c). All abdominal sternites have lateral depressions. On the first sternite, these depressions are almost straight, gradually widening toward the anterior margin (Fig. 1c). The first tarsomeres of the mid- and hindlegs are shorter than the second tarsomeres.

Measurements, mm. Body length, 6.8; pronotum length, 1.55; elytron length, 5.45; and combined width of elytra, 2.8.

Comparison. The new species is close to the recent *D. leechi* Kalik and *D. ater* Deg., from which it differs in the elongate coxae. In addition, the body of the former species is more convex, and the first tarsomeres of the mid- and hindlegs are longer than the second tarsomeres, whereas in the latter species the lateral depressions on the first abdominal sternite are bent and the elytra are only 1.8 times as long as their combined width.

Material. Holotype.

Dermestes vetustus Zhantiev, sp. nov.

Etymology. From the Latin *vetustus* (ancient).

Holotype. SIZC, UA-1522; Rovno amber; Late Eocene.

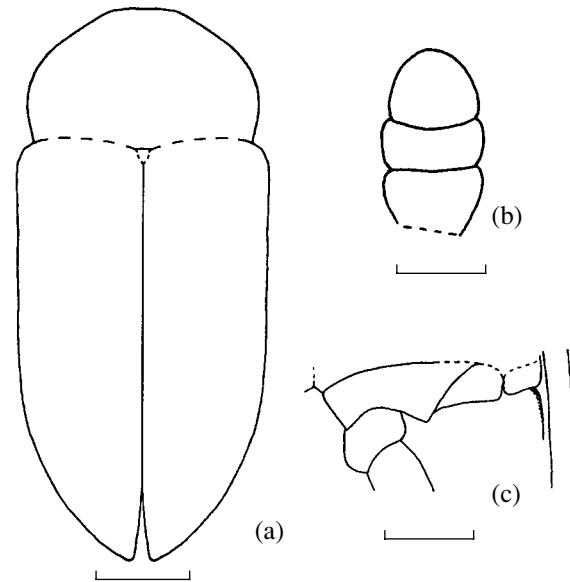


Fig. 2. *Dermestes vetustus* sp. nov., holotype, no. UA-1522: (a) body outline, (b) antennal club, and (c) hind coxa. Scale bar 1 mm in Fig. 2a, 0.2 mm in Fig. 2b, and 0.5 mm in Fig. 2c.

Description (Fig. 2). The entire body except for the left elytron and legs is covered with white substance. Sex unknown. The body is elongate, parallel-sided, moderately convex (Fig. 2a). The cuticle is black and shiny. The upper side is covered with short recumbent hairs, not hiding the surface of the cuticle. The antennal club is shown in Fig. 2b. The pronotum is transverse (Fig. 2a), its maximum width is 1.75 times as great as its length. The lateral sides widen slightly from the posterior corners, then narrow roundly towards the anterior margin. The elytron is parallel-sided, evenly and roundly narrowing beyond its midlength toward the apex. The elytra are 1.6 times as long as their combined maximum width and 3 times as long as the pronotum. Traces of longitudinal striae are barely visible on their surface. Punctuation is dense and regular, the distance between punctures is 1.5–3 times as great as their diameter. The posterior margin of the metepimeron is straight (Fig. 2c). The hind coxa is not elongate, 0.42 times as long as its maximum width (Fig. 2c). The lateral depressions on the first abdominal sternite are almost straight and gradually widen towards the anterior margin (Fig. 2c). The first tarsomeres of the mid- and hind legs are shorter than the second tarsomeres.

Measurements, mm. Body length, 6.3; pronotum length, 1.6; elytron length, 4.8; and combined width of elytra, 3.

Comparison. The new species is very close to *D. ater* Deg., from which it differs in having almost straight, weakly widened, lateral depressions on the first abdominal sternite.

Material. Holotype.

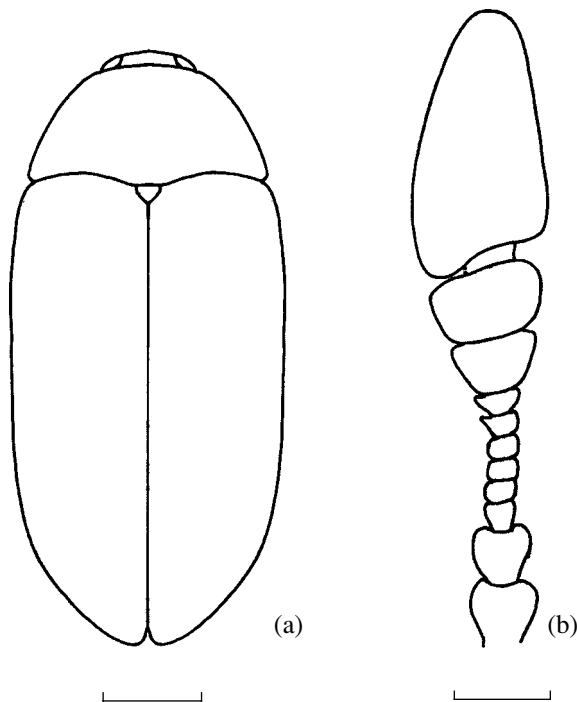


Fig. 3. *Megatoma electra* sp. nov., holotype, no. 4482: (a) body outline and (b) antennal club. Scale bar 0.5 mm in Fig. 3a and 0.1 mm in Fig. 3b.

Genus *Megatoma* Herbst, 1792

Subgenus *Megatoma* s. str.

Megatoma electra Zhantiev, sp. nov.

Etymology. From the Latin *alectra* (amber).

Holotype. No. 4482, Geologisch-Paläontologisches Institut und Museum, Universität Hamburg, Type Catalogue no. 4392 (ex coll. Gröhn, Glinde, no. 4081); Russia, Samland Peninsula, Kaliningrad Region, Yantarnyi; Baltic amber, Late Eocene.

Description (Fig. 3). Male. The body is elongate and parallel-sided (Fig. 3a). The cuticle is black and shiny. Two brown black spots, probably representing traces of the posterior band, are barely visible in the posterior half of the right elytron. The pronotum is covered with short upright hairs; the head, elytra, and underside are covered with short recumbent hairs. The eye is oval, without incision of its inner margin. The ocellus is evident. The antenna is 11-segmented, with a 3-segmented club (Fig. 3b). The first two segments of the club are transverse, the third is twice as long as its maximum width. The pronotum is transverse, 0.45 times as long as its maximum width, evenly convex; its posterior margin is slightly elevated. The sides are evenly roundly narrowing from the posterior corners to the anterior margin. The scutellum is triangular. The elytra are 1.6 times as long as their combined width and 4 times as long as the pronotum; the elytra are almost parallel-sided in the anterior two-thirds, then evenly, roundly narrowing towards the apex.

Measurements, mm. Body length, 2.75; pronotum length, 0.55; elytron length, 2.25; and combined width of elytra, 1.4.

Comparison. The new species differs from the representatives of the genus in which a male has a distinct 3-segmented club (*Megatoma* s. str.) in the different proportions of the segments of the club. In the closest species *M. pubescens* Zett., the last antennomere is 3 times as long as its maximum width.

Remarks. The new species is close to species of the genus *Globicornis* (subgenus *Hadrotoma* Latreille, 1829) in its body shape and in the structure of the club; however, it should be assigned to the genus *Megatoma* based on the number of antennomeres (11).

Material. Holotype.

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