

YANTAROXENOS COLYDIOIDES GEN. ET SP. NOV. (TENEBRIONIDAE: LAGRIINAE) FROM BALTIC AMBER

MAXIM NABOZHENKO^{1, 2*}, ALEXANDER KIREJTSHUK^{3, 4},
and OTTÓ MERKL⁵

¹*Caspian Institute of Biological Resources of Dagestan Scientific Centre of the Russian Academy of Sciences, 367000, M. Gadzhiev str. 45, 367000, Makhachkala, the Republic of Dagestan, Russia*

²*Dagestan State University, 367000, M. Gadzhiev str. 43a, 367000, Makhachkala, the Republic of Dagestan, Russia*

³*Zoological Institute of Russian Academy of Sciences, Universitetskaya nab. 1, 199034, St. Petersburg, Russia*

⁴*CNRS UMR 7205, Muséum National d'Histoire Naturelle, CP 50, Entomologie, 45, rue Buffon, F-75005 Paris, France*

⁵*Hungarian Natural History Museum, H-1088 Budapest, Baross u. 13, Hungary*

*Corresponding author: e-mail: nalassus@mail.ru

Abstract.— A new genus and species of fossil Tenebrionidae is described. *Yantaroxenos colydioides* **gen. et sp. nov.** in the subfamily Lagriinae (presumably the tribe Belopini) originates from Baltic amber. *Yantaroxenos* **gen. nov.** is most similar to the Western Hemisphere genus *Rhyppasma* Pascoe, 1862 (Belopini) based on the general habitus, the granulated pronotal surface, carinate elytra, and the carinate anterior aspect of the pronotum. *Yantaroxenos* **gen. nov.** differs from *Rhyppasma* in the scaly pubescence on the body, the presence of ridges above the eyes, the strongly convex and protruding anterior half of the pronotum that covers the base of the head, the shorter legs, and the absence of 3-segmented antennal club.



Key words.— Coleoptera, Tenebrionidae, Belopini, new genus, new species, Baltic amber, Upper Eocene.

INTRODUCTION

The darkling beetles (Tenebrionidae) form a rather species-rich and morphologically-diverse family of the order Coleoptera in the modern fauna demonstrating a wide scope of structural diversity and ecological preferences. However, they are represented in the fossil record mostly by forms associated with trees. More than 110 fossil taxa of darkling beetles including 88 species have been described to date (Kirejtshuk and Ponomarenko 2015). Fourteen genera from three tenebrionid subfamilies (Lagriinae, Tenebrioninae and Alleculinae) have been recorded from Baltic amber

(Klebs 1910, Larsson 1978, Hieke and Pietrzyeniuk 1984). However, only two species of alleculines were described from the Upper Eocene Baltic amber before the 21st century (Schaufuss 1888, Seidlitz 1896). Studies on the darkling beetles from the Cenozoic amber have increased over the last twenty years with the works of Doyen and Poinar (1994), Kirejtshuk *et al.* (2008, 2010), Alexeev and Nabozhenko (2015), Nabozhenko *et al.* (2016), where representatives of the tribes Diaperini Latreille, 1802, Helopini Latreille, 1802, Palorini Matthews, 2003 (Upper Eocene Baltic amber), Opatrini Brullé, 1832 (Lowermost Eocene Oise amber) were described, and also Edrotini Lacordaire,

1859, Toxicini Oken, 1843, Amarygmini Gistel, 1848, Triboliini Gistel, 1848, Alleculini Laporte, 1840, Diaperini, Adeliini Kirby, 1828 and Cnodalonini Oken, 1843 (= Coelometopini Schaum, 1859) (Lower Miocene Dominican amber).

In this paper, a new genus and species of the tribe Belopini Reitter, 1917 (subfamily Lagriinae Latreille, 1825) from Baltic amber are described. This species is the first record of this tribe in Eocene Amber.

MATERIAL AND METHODS

The holotype is deposited in the collection of the Geological Institute (Institut für Geologie), University of Hamburg (GPIH). Observations were made using a stereomicroscope Leica MZ 16.0 in the Zoological Institute of the Russian Academy of Sciences in Saint Petersburg (ZIN). The specimen came from the Kaliningrad Region, but the collecting locality is not exactly known. Baltic amber originates mostly from localities along the southern coasts of the Baltic Sea and is traditionally dated as the Upper Eocene (Prussian Formation, Priabonian, ca. 38 mya), although there are other estimates of the age based largely on K-Ar dating (Lutetian, 48.6–40.4 my: Ritzkowski 1997), palynological biostratigraphy (Priabonian, 37.2–33.9 my: Aleksandrova and Zaporozhets 2008, etc.)

SYSTEMATICS

Family **Tenebrionidae** Latreille, 1802

Subfamily **Lagriinae** Latreille, 1825

Tribe **Belopini** Reitter, 1917

Genus ***Yantaroxenos*** Nabozhenko, Kirejtshuk et Merkl, gen. nov.

Type species. *Yantaroxenos colydioides* sp. nov.

Diagnosis. Body strongly elongate, narrow, completely covered with dark squamiform hairs. Head with lateral ridges, eyes longitudinally oval, their inner margin bordered by ridges. Antennae short, antennomeres moniliform. Pronotum strongly convex in middle, with protruded convex anterior part; with lateral ridges. Prothorax granulated, each granule with strong short recumbent seta. Prothoracic hypomera without antennal cavities. Prosternal process moderately wide, subtrapeziform, widened at apex, not convex. Procoxae longitudinally oval, procoxal cavities closed externally, postcoxal bridge narrow, mesocoxae round, metacoxae strongly transverse. Elytra weakly depressed on sides, with 9 striae and convex interstriae 3, 5 and 7. Abdominal ventrites 3–5 without exposed

intersegmental membranes. Humeral angles rectangular, widely rounded. Legs short. Femora longer than tibiae. Tarsal formula 5–5–4.

Comparison. *Yantaroxenos* must be included in the family Tenebrionidae based on the following combination of characters: antennae inserted under lateral expansions of frons, concealing at least base of scape dorsally; procoxal cavities closed externally; tarsal formula 5–5–4. *Yantaroxenos* has unclear combination of tribal characters because diagnostic structures of the head are poorly visible. Squamiform (or thickened) setae are present among Tenebrionidae only in some lagrioid groups from the tribe Adeliini (Matthews and Bouchard 2008). Among all Tenebrionidae (including Lagriinae) the new genus is most similar to the Neotropical genus *Rhyppasma* Pascoe, 1862 (tribe Belopini) by the general habitus, granulated surface of prothorax, as well as the carinate pronotum and elytra. *Yantaroxenos* differs from *Rhyppasma* in having squamiform pubescence on its body, ridges above the eyes, strongly convex and protruded middle of anterior edge of the pronotum, shorter legs and absence of a 3-segmented antennal club.

Etymology. The name derives from Russian янтарь (yantar) – amber and Greek ξένος (xénos) – stranger. Gender neuter.

Yantaroxenos colydioides Nabozhenko,
Kirejtshuk et Merkl, sp. nov.
(Figs 1–8)

Type material. Holotype, GPIH no. 4572, coll. Gröhn no. 4736. The specimen is included in a flattened amber bar with irregular polished surface (21 × 11 × 4 mm) having a large crack in an oblique dorsoventral plane crossing the specimen and many small cracks around the beetle, the parts of the integument of the specimen with “milky cover” (Figs. 1–2).

Stratigraphic and geographic range. Upper Eocene Baltic amber of Europe; Prussian Formation, Priabonian, ca. 38 my.

Description. Body strongly elongate, parallel-sided, moderately flattened, densely covered with thick scales and recumbent rather thick setae, brown. Head, elytra and pronotum with sculpture mostly masked by scales. Body length 8.2 mm, width 2.2 mm.

Head with parallel sublateral ridges. Anterior edge of frons straight. Eyes longitudinally oval, widely separated. Inner edge of eyes closed by ridges. Labrum not visible. Genae rounded, elevated. Outer edge of head between gena and anterior edge of frons (“clypeus”) sinuate. Antennae short, with 10 visible antennomeres (base of antennae not visible), not extending beyond middle of prothorax. Scape constricted basally and thickened apically. Pedicel slightly longer than



Figure 1. *Yantaroxenos colydioides* gen. et sp. n., general habitus. Dorsal view (A, C), ventral view (B). Antennae are drawn in visible foreshortening, see real ratio of antennomeres in the description. Length of specimen 8.2 mm.

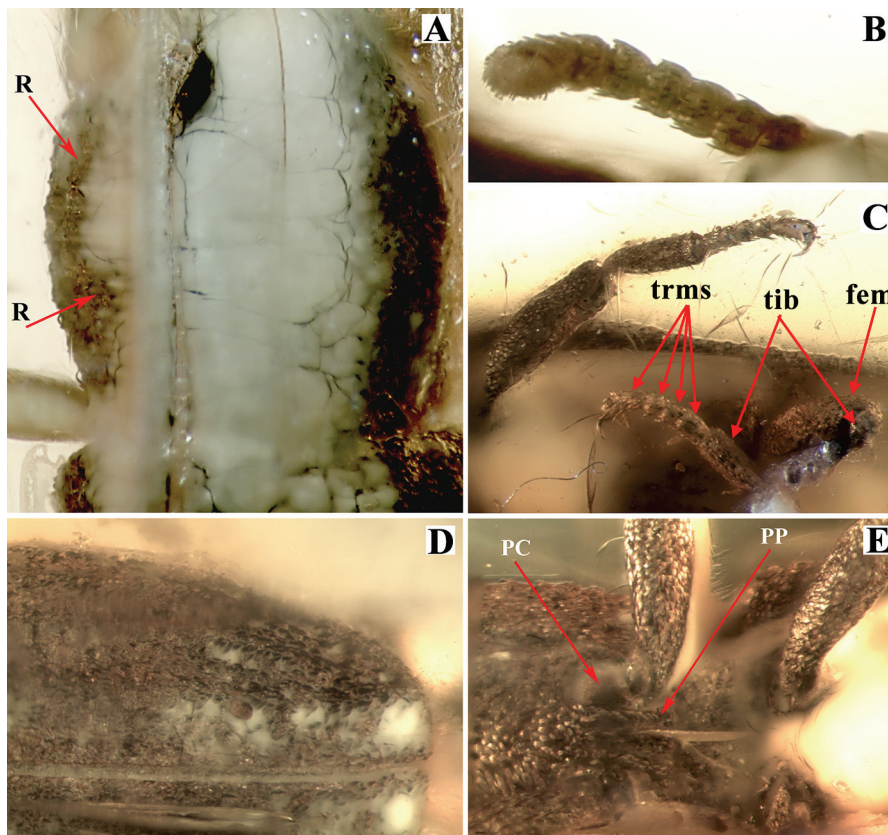


Figure 2. *Yantaroxenos colydioides* gen. et sp. n., details of structure. Pronotum, dorsal view (A), antenna (B), meso- and metatibiae, ventral view (C), apical third of elytra, dorsal view (D), prosternum, ventral view (E). Abbreviations: R – ridges, PC – procoxa, PP – prosternal process, trms – metatarsomeres, tib – tibia (broken), fem – femora. Length of specimen 8.2 mm.

other antennomeres. Ultimate and penultimate antennomeres forming weak club. Antennomeres 3–7 transverse and similarly shaped, antennomeres 8–9 slightly more strongly transverse, wider, antennomere 10 shorter than previous ones and transversely oval. Antennae covered with semi-erect and dense thick hairs. Mandibles, maxillae and labium not visible. Lateral edges of gular emargination projecting and subacute apically.

Pronotum rectangular, elongate (1.5 times as long as wide), widest in middle; base narrower than elytral base; anterior edge strongly projecting, straight in middle, strongly oblique laterally; lateral edges very weakly rounded; base weakly rounded; anterior and posterior angles obtuse, with distinct apex; disc strongly convex in middle, with interrupted ridge along lateral edges, divided into anterior and posterior parts, oval depression along inner side of posterior part and longitudinal depression along inner side of anterior part; integument densely covered with setiferous granules; setae directed forward; outer edge with line formed by small granules bearing curved recumbent setae; lateral edges not beaded. Prothoracic hypomera without antennal cavities, not flattened near margins. Procoxal cavities externally closed. Prosternum with dense granules and setae, at level of anterior procoxal edge about 1.1 times as wide as length from anterior edge before procoxae. Postcoxal bridge narrow.

Elytra strongly elongate (2.4 times as long as wide), subparallel-sided (lateral edges shallowly emarginate in basal 2/3), 2.4 times as long as and 1.5 times as wide as pronotum. Humeral angles widely rounded, weakly projecting. Elytra with 9 striae, with 3 ridges (intervals 3, 5 and 7 strongly convex). Stria 9 inclined to ventral side and not visible dorsally. Elytra covered with scales and short dark

recumbent setae. Elytral apex almost straight. Epipleura not reaching apex of elytra.

Abdominal ventrites densely covered with small granules and recumbent hairs. Relative lengths of ventrites 1–5: 3–2.5–2.2–1.8–1. Mesoventrite, meso- and metepisterna and metepimera not visible. Metaventrite with midlongitudinal depression (discrimen). Mesocoxae round, metacoxae strongly transverse.

Femora longer than tibiae. Tibiae straight. Tarsi about as long as tibiae. Pro- and mesotarsi with tarsomere 1 slightly elongate, tarsomeres 3–4 subequal in length and width, tarsomere 5 strongly elongate. Length of pro- and mesotarsomeres 5 subequal to combined length of tarsomeres 2–4, length of metatarsomere 4 subequal to that of two preceding tarsomeres.

Etymology. The specific epithet derives from the beetle subfamily Colydiinae (of the family Zopheridae) because of some of its similarities with members of this subfamily.

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