

A new Luciolinae firefly (Coleoptera: Lampyridae) from the Baltic Amber

Новый светлячок подсемейства Luciolinae (Coleoptera: Lampyridae) из балтийского янтаря

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КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Lampyridae, новый род, новый вид, Балтийский янтарь, эоцен.

ABSTRACT: A new fossil genus of fireflies, *Eoluciola* **gen.n.**, and a new species, *Eoluciola varang* **sp.n.**, are described from the Baltic Amber. The new taxon is placed in Luciolinae, between Luciolini and Pristolycini.

РЕЗЮМЕ: Из Балтийского янтаря описывается новый род Lampyridae, *Eoluciola* **gen.n.**, и новый вид, *Eoluciola varang* **sp.n.** Новый таксон помещается в Luciolinae, между трибами Luciolini и Pristolycini.

First fossil specimens of fireflies were reported from the Baltic Amber more than a hundred years ago [Klebs, 1910]; however, it was not until 2012 that the first amber lampyrid taxon was described [Kazantsev, 2012]. The taxon was discovered in the Baltic Amber and was placed in the subfamily Otoretinae as a new genus, *Electoretia* Kazantsev, 2012.

A study of further Baltic Amber inclusions, this time from the Hoffeins collection in Hamburg, allows adding another new taxon, related to *Luciola* Laporte, 1833. *Luciola* had already been known to have fossil members. A fossil *Luciola* species from Rott brown coals in Germany (Lower Oligocene) was described in the middle of the XIX century [Heyden, 1862]; apparently another species from the Baltic Amber was referred to by Klebs [1910] as just *Luciola* sp. The discovered amber fossil, however, cannot be attributed to *Luciola*, or any other lucioline taxon, and appears to represent a new, apparently now extinct, genus.

The description of the new genus and the new species is presented below.

Eoluciola Kazantsev **gen.n.**

Type species: *Eoluciola varang* Kazantsev **sp.n.**

DESCRIPTION. **Female.** Alate, flattened, elongate (Fig. 1). Head small, transverse, not exposed. Eyes relatively small, spherical (Fig. 2). Palps small, slender; ultimate palpomeres elongate and pointed. Antennal sockets separated by ca. their diameter (Fig. 2). Antenna 11-segmented, relatively short, filiform; pedicel (antennomere 2) elongate, about as long as antennomere 3 and subsequent antennomeres; pubescence on antennomeres 3–11 short and suberect (Figs 1–2).

Pronotum transverse, narrowing anteriorly from posterior angles, with slightly explanate sides and acute posterior an-

gles; densely punctate (Fig. 1). Prosternum short, V-shaped (Fig. 2). Scutellum triangular, slightly rounded at apex (Fig. 1). Mesoventrite short, V-shaped. Discrimen almost attaining to mesoventrite. Elytra elongate, slightly convex, elliptical, with three elytral costae, first (from suture) attaining to elytral middle, second to elytral apex, third to elytral five sixths, densely punctate, punctures arranged in four longitudinal rows between suture and costae 1–3 and more rows between costa 3 and lateral margin; short, erect pubescence at costae and at margins (Fig. 1). Epipleuron attaining to elytral apex, widest near humerus (Fig. 2). Metathoracic wings fully developed.

Legs relatively short and slender; hind coxae elongate and separated; trochanters small and short; femurs and tibiae straight, narrow, tibiae slightly longer than femurs; tarsomeres 1–3 narrow, without plantar pads, tarsomere 4 deeply incised, with plantar pads (Figs 1–2); claws simple.

Abdomen with seven ventrites, first medially almost entirely incised and overlapped by metacoxae; exposed portion of ultimate ventrite transverse, trapezoidal; ventrites without photic organs (Fig. 2).

Male. Unknown.

ETYMOLOGY. The name of the new genus is a combination of “Eocene”, and the genus name “*Luciola*”. Gender feminine.

DIAGNOSIS. *Eoluciola* **gen.n.** is distinguishable from *Luciola* by the densely punctate pronotum and elytra, prominent elytral costae (Fig. 1) and absent light organs on female ventrites (Fig. 2). *Eoluciola* **gen.n.** seems to be more similar to *Curtos* Motschulsky, 1845, also of the tribe Luciolini, but is separable by the presence of three conspicuous elytral costae and absent light organs in the female. It also resembles *Pristolytus* Gorham, 1883, from the tribe Pristolycini, differing by the short filiform antennae, shorter pronotum with oblique sides and absent median carina (Fig. 1), as well as by the shorter first elytral costa (Fig. 1).

As *Eoluciola* **gen.n.** demonstrates characters of both Luciolini (short filiform antennae, short pronotum with oblique sides and absent median carina) and Pristolycini (three prominent elytral costae and absent light organs), it is placed in Luciolinae incertae sedis at the root of the clade.

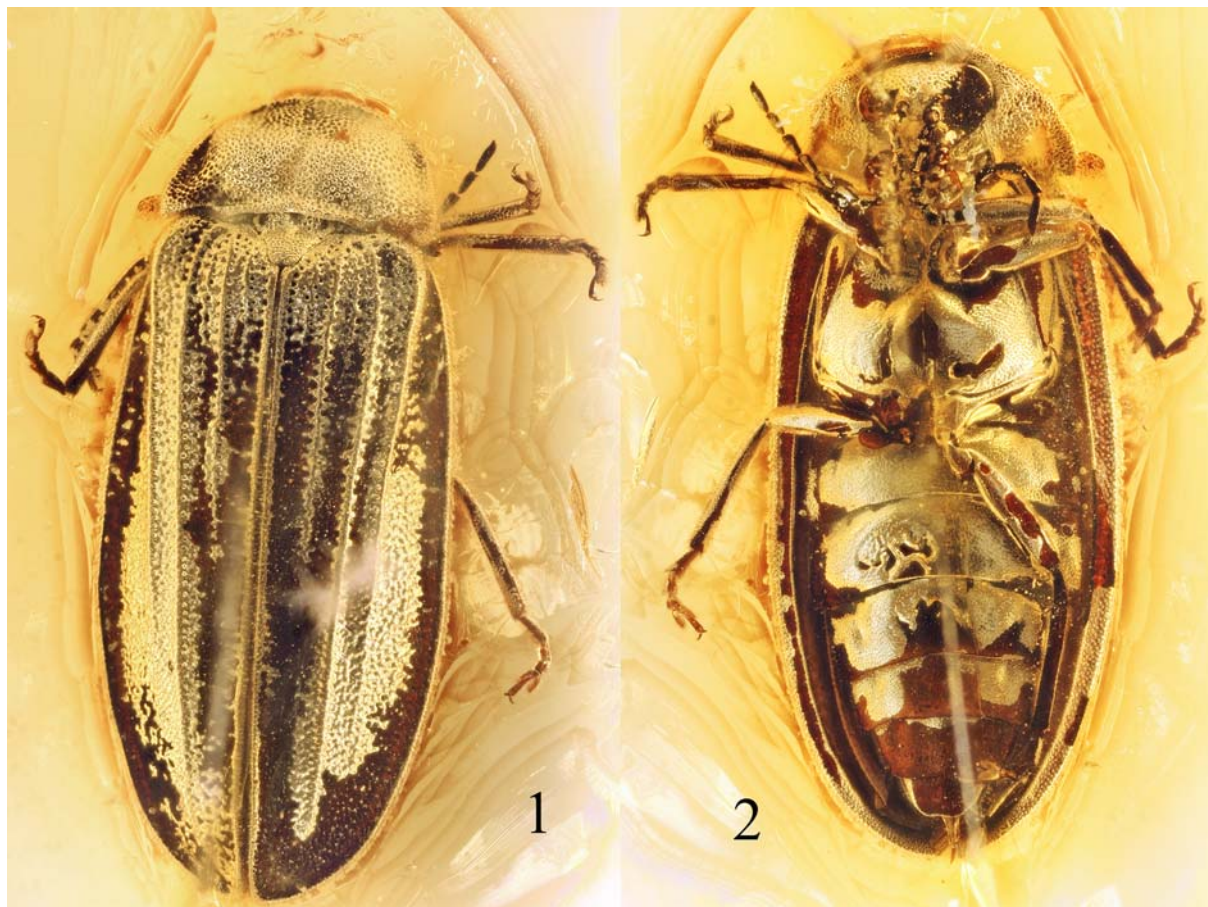
Eoluciola varang Kazantsev **sp.n.**

Figs 1–2

MATERIAL: Holotype, ♀, No. 1687–1, Baltic amber, Eocene (Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany).

DESCRIPTION. **Female.** Dark brown.

Eyes relatively small, interocular dorsal distance ca. 2.5



Figs 1–2. General view of *Eoluciola varang* gen.n., sp.n., holotype female: 1 — dorsally; 2 — ventrally.
Рис. 1–2. Внешний вид *Eoluciola varang* gen.n., sp.n., голотип, самка: 1 — сверху; 2 — снизу.

times greater than eye radius. Ultimate maxillary palpomere ca. 1.5 times longer than wide. Antennae filiform, attaining to elytral third, antennomere 2 ca. 1.2 times shorter than antennomere 3 (Fig. 2).

Pronotum transverse, ca. 2 times as wide as long, sinuate anteriorly, with prominent acute posterior angles. Scutellum with fine dense punctuation, feebly emarginate at apex (Fig. 1).

Elytra ca. 3 times as long as wide at humeri, slightly elliptical, widest at two thirds (Fig. 1).

Tarsomere 1 as long as tarsomeres 2–3 combined and subequal in length to tarsomere 5 (Fig. 2).

Length (from anterior head margin to end of elytra): 6.6 mm. Width (humeraly): 2.4 mm.

Syninclusions. None.

Male. Unknown.

ETYMOLOGY. The name of the new species is derived from the noun «Varang», the Old Russian for «Varangian», also one the former names of the Baltic Sea.

DIAGNOSIS. *Eoluciola varang* sp.n., the only known representative of the genus, is easily distinguishable from other lucioline by the generic characters.

Whereas *Luciola* is distributed rather widely in the Eastern Hemisphere [although the concept of the genus is in the process of alteration — e.g., Ballantyne & Lambkin, 2009; Fu et al., 2010], *Curtos* and *Pristolycus*, with which *Eoluciola* gen.n. appears to have closest affinities, are known from the Eastern Palaearctic, from the Kuril Islands and Japan through China to Northern Vietnam (*Pristolycus*), and East-

ern Palaearctic and Sunda Archipelago (*Curtos*). The occurrence of an apparent relative of the two taxa in the Baltic Amber testifies to the possible basal position of *Curtos* in Luciolini and *Pristolycus* (Pristolycini) in Luciolinae.

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