

A new species of the genus *Holocentropus* (Trichoptera: Polycentropodidae) from Rovno amber


Новый вид рода *Holocentropus* (Trichoptera: Polycentropodidae) из ровенского янтаря

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Abstract. A new caddisfly species *Holocentropus tutkaktut* **sp. nov.** (Polycentropodidae) is described from Priabonian Rovno amber (Upper Eocene, 33.9–37.8 million years old). With the new species, the family Polycentropodidae is represented in Rovno amber by 19 species, and the genus *Holocentropus* McLachlan, 1878, by nine species.

Резюме. Описан новый вид ручейника *Holocentropus tutkaktut* **sp. nov.** (Polycentropodidae) из ровенского янтаря (верхний эоцен, 33.9–37.8 млн. лет назад). Вместе с этим новым видом семейство Polycentropodidae представлено в ровенском янтаре 19 видами, а род *Holocentropus* представлен там девятью видами.

Key words: Eocene, caddisflies, taxonomy, paleontology, Polycentropodidae, *Holocentropus*, new species

Ключевые слова: Эоцен, ручейники, таксономия, палеонтология, Polycentropodidae, *Holocentropus*, новый вид

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Introduction

Diversity of Trichoptera in Baltic amber was described by Ulmer (1912) and includes 152 species listed in his monograph. Other resins found in Europe, which has a rich fauna in Paleogene deposits, are Bitterfeld and Rovno ambers (Rasnitsyn & Quicke, 2002). A total of 25 Trichoptera families, including two extinct families (Ogomyidae and Yantarocentridae), have been found

in European ambers (Wichard 2013; Ivanov & Melnitsky, 2015). The list of Trichoptera from Rovno amber includes 46 species (Ivanov et al., 2016; Perkovsky, 2017; Melnitsky et al., 2021a, 2021b). The new caddisfly species of Rovno amber are described in a series of recent papers (Melnitsky & Ivanov, 2010, 2013, 2016a, 2016b; Melnitsky et al., 2021a, 2021b). Fossil faunas of the Paleogene resins of Europe reveal great diversity

of Polycentropodidae in the past. The specimens from this family were very abundant in the Baltic and Rovno amber faunas (Ivanov et al., 2016).

The family Polycentropodidae includes more than 940 species in the modern world fauna (Morse, 2021). The genus *Holocentropus* McLachlan, 1878 comprises 42 species; it is distributed in the Palaearctic and the Nearctic zoogeographical regions. The only Oriental species, *Holocentropus vietnamellus* Malicky, 1995, has been transferred to the genus *Plectrocnemia* Stephens, 1836 (Malicky, 2010; Chantaromongkol et al., 2010); we concur with this transfer. The genus *Holocentropus* is represented by 29 fossil species, eight of which have been recorded from Rovno amber. Twenty fossil species of this genus have been found in Baltic amber, and five species, in Bitterfeld amber (Ivanov et al., 2016). One species, *H. spurius* Botosaneanu et Wichard 1983, is known from Mesozoic Taymyr amber (Botosaneanu & Wichard, 1983). Three species, *H. flexiflagrum* Melnitsky et Ivanov 2010, *H. kobodok* Melnitsky et Ivanov 2013 and *H. zhiltsovae* Melnitsky et Ivanov 2013, are endemic in Rovno amber.

The genus *Holocentropus* was much more common and diverse in the Priabonian than in the extant faunas. Only six extant species are known from the Palaearctic vs. 30 named species from European amber, including four Baltic and four Rovno species described since 2010. We can suppose that at least other ten species of *Holocentropus* are present in Rovno amber; e.g. *Holocentropus* from rich new localities in the Varash District of the Rovno Province (Melnitsky et al., 2021a; Tshernyshev & Perkovsky, 2021; and references therein) and in the eastern Volyn Province still have not been studied. There are eight caddisfly species of the known 47 Rovno amber Trichoptera (including a new species described below) that are found also in the Baltic amber; these common faunal elements comprise 17% of all Rovno caddisfly species.

Material and methods

The new *Holocentropus* species was found in the Pugach quarry (Klesov deposit) in the Rovno Province of Ukraine. Until recently, it was almost the only legal amber mine in Ukraine (Perkovsky et al., 2010). The amber samples that we exami-

ned were mostly mined in the Pugach quarry (Perkovsky, 2017) and are deposited in the amber collection of the I.I. Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine, Kiev (SIZK); the type is housed in that collection. The weight of the sample with the holotype, after the primary treatment, is 1.35 g.

The study of these fossils was accomplished with a Nikon SMZ1500 stereomicroscope provided with a Nikon D700 and Canon Powershot A640 cameras. Photographs have been post-processed with graphics software to reveal details of the structures. We have used the conventional methods for studying insects in amber (Rasnitsyn & Quicke 2002).

Systematic paleontology

Order **Trichoptera** Kirby, 1813

Suborder **Annulipalpia** Martynov, 1924

Family **Polycentropodidae** Ulmer, 1903

Genus ***Holocentropus*** McLachlan, 1878

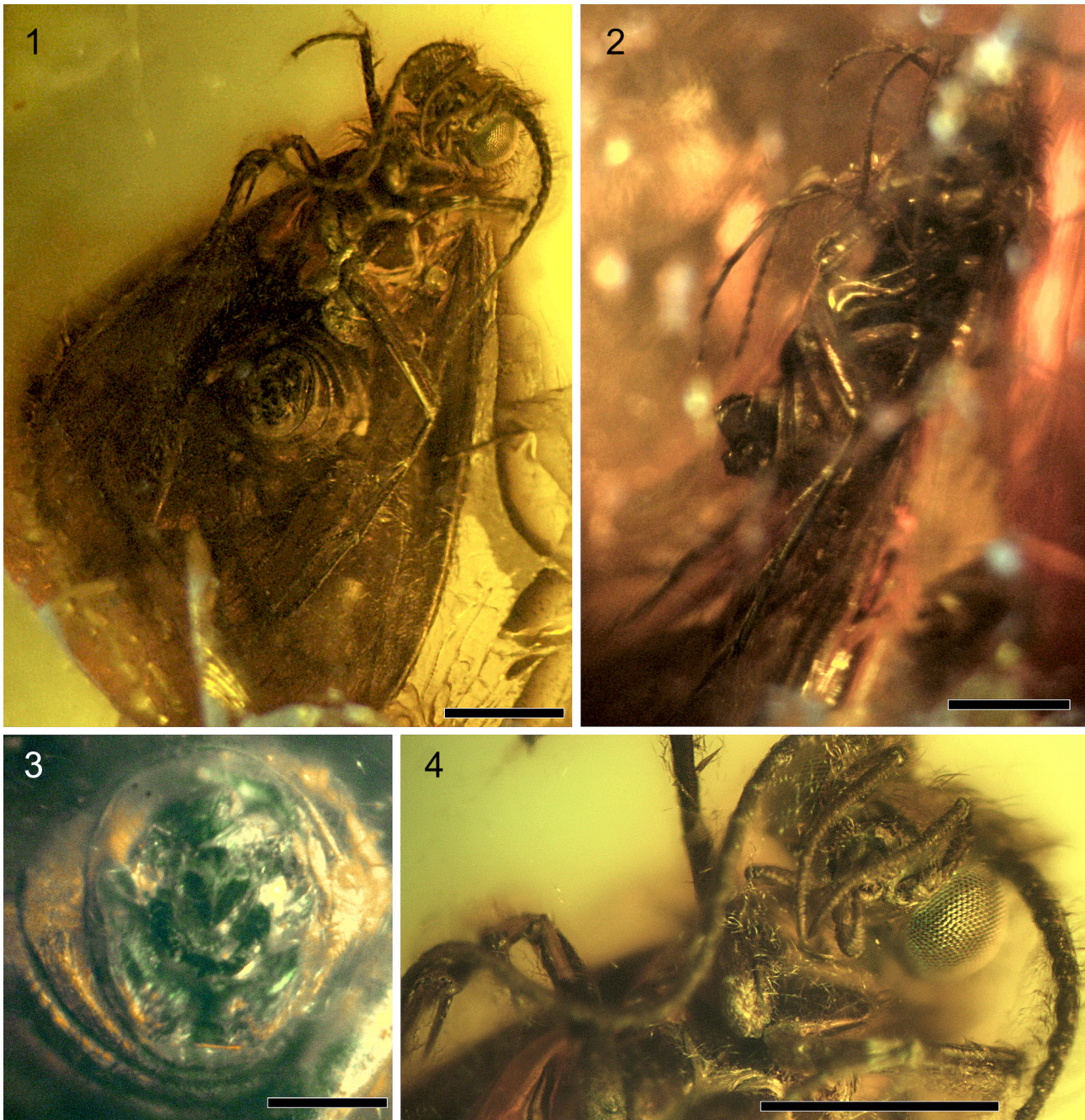
***Holocentropus tutkaktut* sp. nov.**

(Figs 1–6)

Holotype. Male. SIZK K–25431, Rovno amber, late Eocene, **Ukraine**. Syninclusions: stellate hairs.

Description. Body length 3.8 mm; forewing length 4.5 mm. Head, antennae, abdomen, legs and thorax brown. Wings light brownish-yellowish. Head with dark hairs. Antennae shorter than forewings, with abundant long hairs and small sparkling dots probably representing pseudoplastic sensilla; flagellar segments with groups of sensilla on anteroventral surfaces. Palps with annulated, long terminal segments; second segment slightly widened, with tuft of strong bristles on ventral surface. Lateral sternal processes of abdominal segment V long, wide basally and very thin apically.

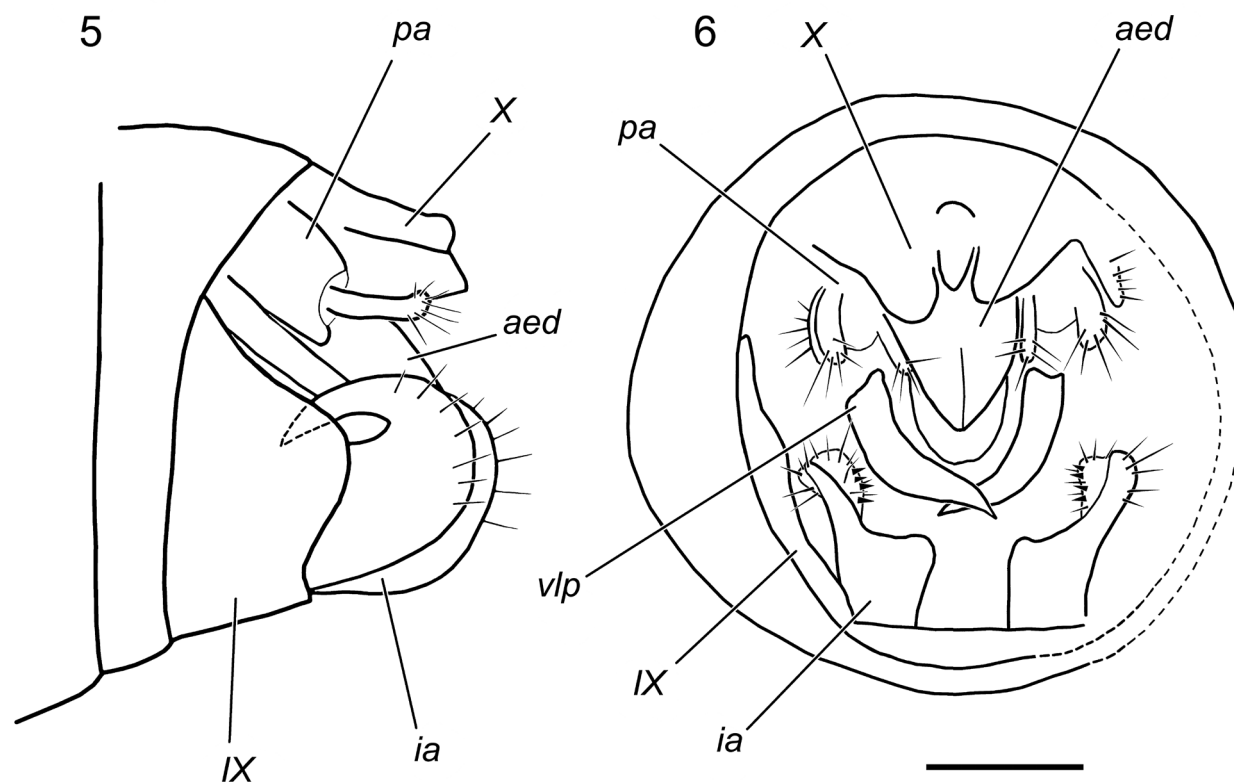
Male genitalia. Inferior appendages of unusual structure: in ventrocaudal view, their rectangular bases and laterodorsal hook-like projections provided with posterior bristles and dorsomedial spines; with apices curved anteriorly in lateral view. Posterior margin of segment X with three sclerotised lobes: large lateral ones and smaller medial one. Preanal appendages (cerci) each consisting



Figs 1–4. *Holocentropus tutkaktut* sp. nov., male. **1**, habitus, ventral view; **2**, habitus, left lateral view; **3**, male genitalia, caudal view; **4**, head, ventral view. Scale bars: 1 mm (1, 2, 4); 0.25 mm (3).

of two finger-like processes: dorsolateral process long and wide, with rounded apex, ventromedial process shorter, with pointed apex. Paired long black processes with pointed apices located ventrally to segment X and preanal appendages; these processes possibly ventrolateral branches of segment X. Aedeagus wide and long, with pointed dorsal part and rounded ventral lobe.

Comparison. From *Holocentropus curvatus* Ulmer, 1912 which appears to be the closest to the new species in some characters, it differs by the shape of the inferior appendages: in *H. curvatus*, the basal part of each inferior appendage is longer, with a short caudal projection and a larger hook-like anterodorsal process. The ventrolateral processes of segment X are stronger and longer in the new species.



Figs 5, 6. *Holocentropus tutkaktut* sp. nov., male. **5**, male genitalia, left lateral view; **6**, male genitalia, caudal view. Abbreviations: IX, X – segments IX, X; aed – aedeagus; ia – inferior appendages; pa – preanal appendages; vlp – ventrolateral projection. Scale bar: 0.2 mm (5, 6).

Etymology. The specific name *tutkaktut* is indeclinable and must not agree in gender with its generic name; it derives from Russian and means “it’s already here”.

Distribution. Priabonian Rovno amber, Ukraine.

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