

Tomoderinae (Coleoptera: Anthicidae) of the Baltic amber

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Abstract: *Tomoderus balticus* sp. nov., the first species of Tomoderinae (Coleoptera: Anthicidae) from the Baltic amber is described and illustrated. Short bibliographical review of Baltic amber Tomoderinae is presented.

Key words: Coleoptera, Anthicidae, Tomoderinae, *Tomoderus*, Eocene, Baltic amber.

Introduction

The Tomoderinae is one of the eight subfamilies of the Anthicidae sensu stricto (Chandler 2010). There are 7 genera recognized within this subfamily, and over 300 species known worldwide, mostly of tropical origin (Chandler 2010). The genus *Tomoderus* LAFERTÉ-SÉNECTÈRE, 1849 is the most diverse group within the subfamily, with about 200 known recent species, mostly distributed in tropical part of Asia, the Indo-Australian transition zone, and in the Afrotropical region.

First fossil species of Tomoderinae - *Tomoderus balticus* sp. nov. - is described in this publication.

Material and methods

Specimens were studied using a Leica S6D stereomicroscope. Specimen photographs were taken using a Canon EOS 450D SLR camera attached to the microscope, and CombineZP software was used for image stacking. The holotype of the newly described species is deposited in the collection of Latvian Natural History Museum (LDM, Latvijas dabas muzejs) in Rīga. All label data is reproduced exactly, with no corrections or additions; labels (if more than one for the same specimen) are separated by slashes (/). If not otherwise stated, all labels are printed. Author's comments are placed in square brackets [].

Systematic part

***Tomoderus balticus* sp. nov.** (Figs 1-4)

Holotype ♀ LDM: No. G 404/1 / HOLOTYPUS [label red] / TOMODERUS balticus sp. nov. det. D.Telnov, 2011.

Baltic amber (collected in Latvia or Lithuania), Upper Eocene. Beetle inclusion in a slice of amber with numerous circular dim microcracks around the right side of the body, underside is invisible.

Derivatio nominis: This species is named after its geographical point of origin - the Baltic region of Europe.

Measurements: Total body length ~2.25 mm, maximum combined width across middle of elytra 0.65 mm; head ~0.4 mm long, through eyes ~0.3 mm broad [head is partly invisible], pronotum 0.45 mm long, maximum width 0.45 mm, minimum width 0.25 mm, elytra 1.4 mm long.

Colouration: Dorsum uniformly black to black-brown. Legs, antennae, palpi and underside dark brown.

Description: Head triangular, dorsally glossy and shiny. Eyes large and strongly prominent, coarsely faceted. Tempora shorter than longitudinal diameter of eye (in dorsal view). Head base nearly straight. Punctures large and

coarse, intervening spaces as large as to smaller than puncture size. Pubescence long but quite sparse, suberect. Separate long erect setae on base and around eyes. Antennae stout, reaching elytral humeri, covered by dense short and sparse long erect setae. Basal antennomere longest – thickened & elongate, slightly widened distally. Second antennomere shortened, slightly widened distally. Third antennomere long, 1/4 longer than preceding. Antennomeres 4-6 widened distally, 7-10 triangular - shortened and strongly widened distally, antennomeres 9-10 transverse. Penultimate antennomere as long as broad. Terminal antennomere broadly triangular, in holotype almost 2x longer than preceding. Terminal maxillary palpomere suboval. Pronotum dorsally roughly and confusedly punctured. Punctures are round to slightly elongate, on anterior lobe much larger than on posterior lobe. Lateral transverse depression dorsally minutely and very densely punctured, without indication of any impressions or carinae. Anterior margin broadly rounded, lateral constriction of typical depth. Anterior lobe with very shallow median longitudinal impression. Pubescence sparse, quite long, appressed, with several long and erect setae on sides and on disc. Scutellum small,

trapezoidal. Elytra elongate, flattened dorsally, glossy and shiny, with rounded but visible humeri. Postbasal transverse impression very shallow. Punctures irregular, large, coarse and dense in basal half, intervening spaces equal to or larger than punctures. Punctures toward apex becoming smaller and shallower. Pubescence long and dense, suberect. On disc with numerous longer and erect setae. Epipleuron broad, complete. Sutural striae very short, only developed at extreme apices of elytra. Hind wings fully developed. Last visible tergite (morphological tergite VII) partly exposed, broadly rounded apically in the holotype. Legs long and slender, densely setose. Anterior tibiae slightly widened distally. Basal metatarsomere as long as combined length of remaining metatarsomeres. Penultimate tarsomeres small and bilobate.

Differential diagnosis: Due to its body shape, shape of the pronotum, structure of its dorso-lateral constriction, and by the elongate, dorsally flattened and irregularly punctate elytra, the new species is not similar to any recent species except the Papuan *T. nigerrimus* UHMANN (Telnov 2011). Among the majority of Palaearctic, Oriental and Neotropical species, *T. balticus* sp. nov. differs in its very dark, black to black-brown colouration of the dorsal

body and presence of a complete median longitudinal impression on the anterior pronotal lobe. The most similar species are Oriental and Neotropical, and these are briefly discriminated below.

Tomoderus appendicinus
UHMANN, 1993 (Malayan Borneo: Sabah) - apices of male elytra are derived, bearing narrow appendices, the apical antennomeres and apical area of elytra are generally paler, and the lateral constriction of pronotum shallower.

Tomoderus canaliculatus
CHAMPION, 1895 (Central America: Nicaragua & Costa Rica) - generally brown coloured but some specimens seen from Nicaragua are very dark brown, the median longitudinal impression is very distinct and is present both on the anterior and posterior pronotal lobes, and the elytra are finely punctured.

Tomoderus excavatus CHAMPION, 1895 (Central America: Guatemala & Costa Rica) - generally dark brown coloured, the head is transverse (broader than long), and the elytra are with a distinct and deep postbasal transverse impression.

Tomoderus fuscobrunneus
HEBERDEY, 1936 (Indonesia: Sumatra) - total body length 2.0 mm, antennae and legs paler than dorsal body, a short median longitudinal carina is present in the lateral constriction.

Tomoderus nigerrimus UHMANN, 1999 (Papua New Guinea: Morobe province) – the median longitudinal impression of the pronotum is lacking, the tarsi are distinctly paler than the rest of the body, the lateral constriction of the pronotum is much deeper in lateral view.

Tomoderus pullatus KREKICH-STRASSOLDO, 1929 (The Philippines: Luzon) – total body length 1.8 mm, the antennae and legs are paler than the dorsal body, the head is transverse (broader than long), there is a short median longitudinal carina present in the lateral constriction, the median longitudinal impression of the anterior pronotal lobe is incomplete (not reaching the lateral constriction), and the lateral constriction of the pronotum is very deep.

***Tomoderus* sp.**

Material ♀ LDM: No. G 404/2 / TOMODERUS sp. [species nova] det. D.Telnov, 2011.

Baltic amber (collected in Latvia or Lithuania), Upper Eocene. Beetle inclusion in a slice of amber with numerous microcracks around the body, upper side is completely invisible (Figs 5-8).

Measurements: Total body length ~2.65 mm. This specimen differs from *T. balticus* sp. nov. in being larger (ca. 2.65 mm compared

to ca. 2.25 mm), uniformly brown coloured, and having a longer terminal antennomere. The dorsal surface is completely hidden under microcracks in the amber, therefore it is not possible to describe this species more accurately.

Bibliography on *Tomoderus* sp. from the Baltic amber: Klebs (1910: 237); Bachofen-Echt (1949: 112); Abdullah (1964: 331); Larsson (1978: 146); Spahr (1981: 10).

Note: Klebs (1910) mentioned two Baltic amber specimens from his collection. The same specimens were cited by all later authors (listed above). The location of two specimens from Klebs's collection was could not be determined during the present study. At least a part of Kleb's collection supposed to be destroyed in Königsberg during the World War II.

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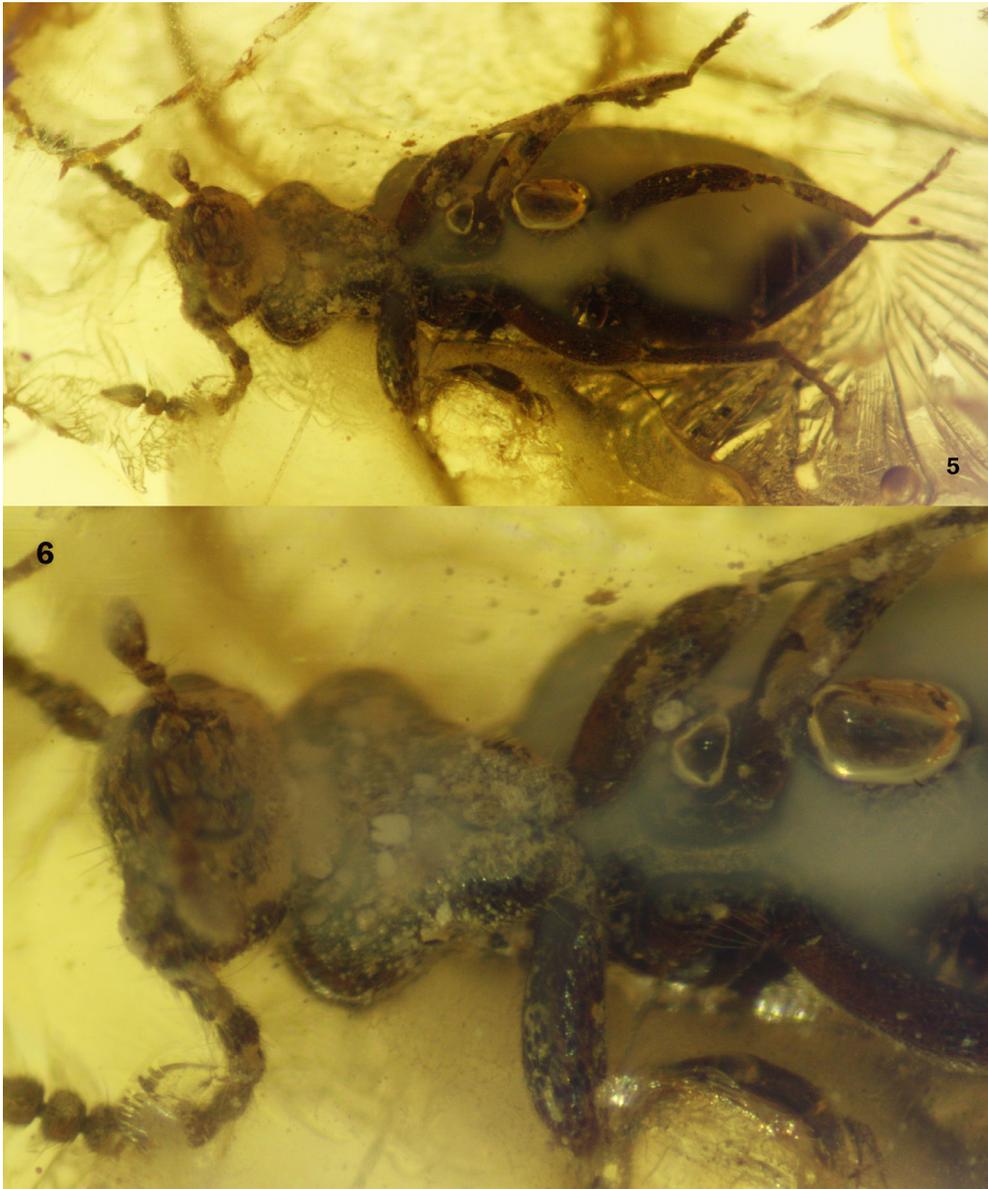
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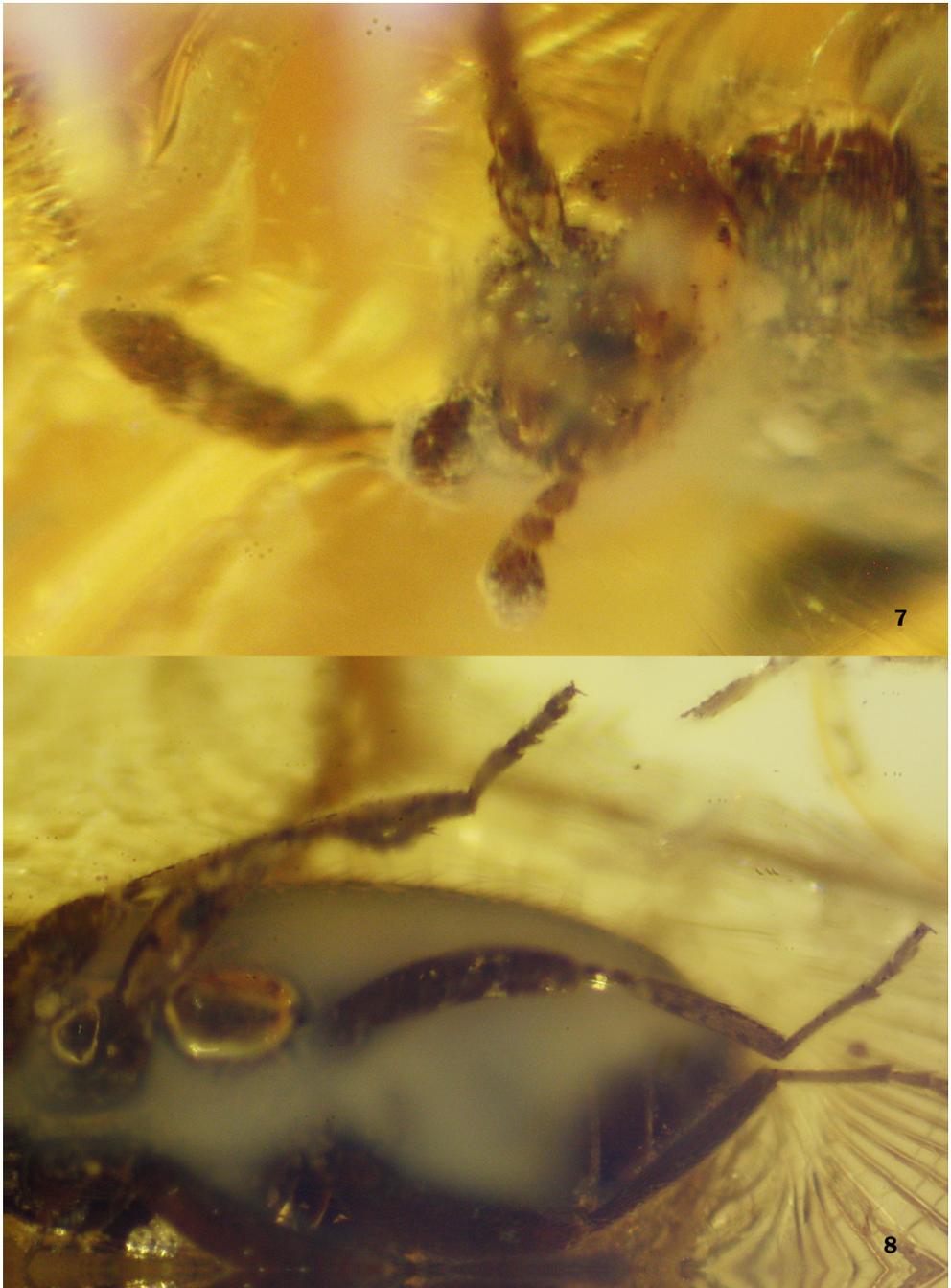
Figures 1-2. *Tomoderus balticus* sp. nov., holotype LDM: 1 - habitus, lateral, 2 - habitus, dorso-lateral.



Figures 3-4. *Tomoderus balticus* sp. nov., holotype LDM: 3 - habitus, dorsal, 4 - legs.



Figures 5-6. *Tomoderus* sp.: 5 - habitus, ventral,
6 - forebody, ventral.



Figures 7-8. *Tomoderus* sp.: 7 - head, fronto-lateral,
8 - abdomen and hind legs, ventral.