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A second species of *Psyllototus* (Coleoptera: Chrysomelidae: Galerucinae: Alticini) from the Upper Eocene Baltic amber

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Abstract

Psyllototus doeberli **sp. nov.**, a second species of the paleoendemic genus is described. This is the first named species of Alticini from the Upper Eocene Baltic amber of Yantarny, Kaliningrad region, Russia. A checklist of known Alticini from fossil resins is provided.

Key words: *Psyllototus doeberli*, new species, Baltic amber, Upper Eocene

Introduction

The genus *Psyllototus* was established for a new species *Psyllototus progenitor* Nadein, from the Rovno amber of the Upper Eocene of Ukraine (Nadein and Perkovsky, 2010). This genus is closely related to the recent *Psylliodes* Laterille, 1827, from which it differs by the 11-segmented antenna (in *Psylliodes*, the antenna is 10-segmented). A second species of *Psyllototus* from the Baltic amber is described here.

Information on Alticinae in Baltic amber is scanty (Hieke & Pietrzeniuk 1984; Klebs 1910; Kubisz 2000, 2001) and none of them have so far been identified up to the species level. A detailed review of Chrysomelidae in the fossil records is given in the catalogue by Ponomarenko & Kirejtshuk (2012).

Material and methods

The type material is deposited in the Institute of Systematic Biology, Daugavpils University, Daugavpils, Latvia. Observations were made using Nikon SMZ 745T stereomicroscope. The photographs were taken with Zeiss Luminar 63mm lens mounted on Canon 50D body. The descriptive terminology follows Konstantinov & Vandenberg (1996).

Results

Genus *Psyllototus* Nadein

Type species: *Psyllototus progenitor* Nadein in Nadein & Perkovsky, 2010
Type strata and locality: Rovno amber, Upper Eocene; Klesov, Ukraine.

Diagnosis. Body oblong, moderately convex, antenna 11-segmented, pronotum without grooves or furrows, elytral punctation striate, metafemora swollen, metatarsus attached nearly at middle of metatibia, first metatarsomere about as long as half of metatibia.

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***Psyllototus doeberli* sp. nov.**
(Figs 1–5)

Type material. Holotype: "Nr. 013" [white printed label], "Holotype / *Psyllototus doeberli* **sp. nov.** / Bukejs, Nadein det. 2012" [red printed label]; sex unknown (Institute of Systematic Biology, Daugavpils University, Daugavpils, Latvia). A rather clear complete beetle; the mouthparts and part of the ventral side of the specimen are obscured by a "milky" cover. The specimen is embedded in a small, thin subquadrangular amber piece (length about 13 mm, width 11 mm, and weight 0.3 g). Other animals or plant syninclusions are absent in the studied amber piece.

Type strata. Baltic Amber, Upper Eocene, Prussian Formation.

Type locality. Yantarny, Kaliningrad region, Russia.

Etymology. This species is dedicated to our colleague Manfred Döberl (Abensberg, Germany), a famous specialist in Alticini.

Diagnosis. *Psyllototus doeberli* **sp. nov.** differs from *P. progenitor* in having a wider pronotum, barely narrower than elytral base, with smaller and finer punctation; wider and flat elytral intervals with sparse, weaker punctures on striae.

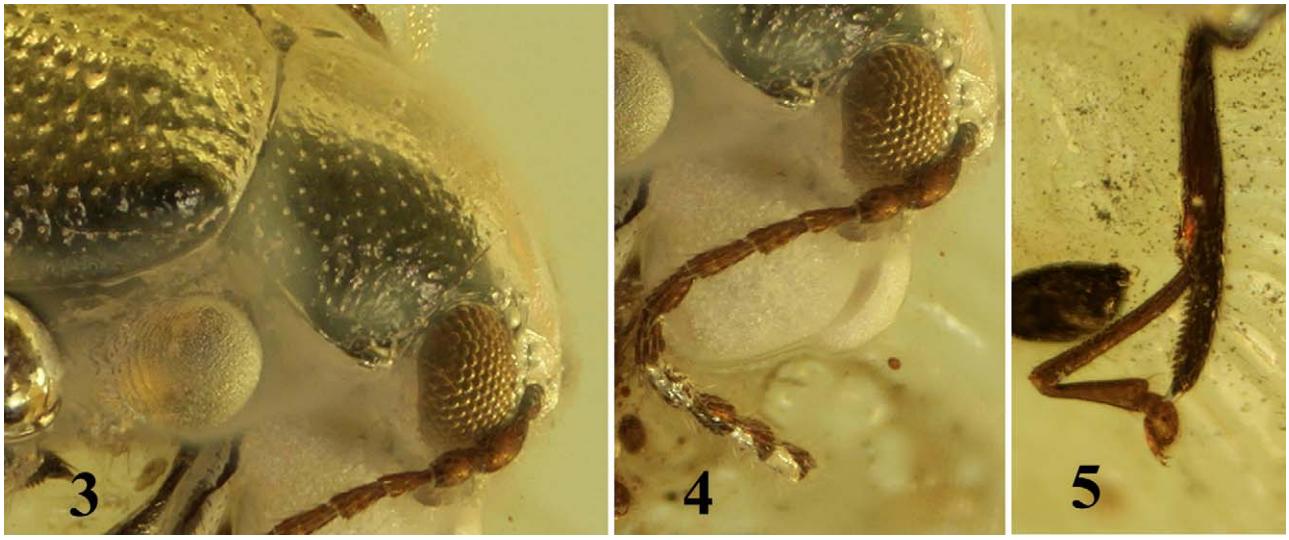
Description. Body length 1.75 mm, maximum width 0.9 mm; oblong, dorsally weakly convex, glabrous, ventrally moderately convex. General color dark brown, shiny; antenna, tibiae and tarsi paler, rufous, dull.

Head hypognathous, transverse, evenly convex dorsally; without punctation, covered with very fine rugosity. Eyes laterad, convex, large, vertical diameter 1.4 times more than transverse diameter; with moderately large, distinct facets; distance between eyes nearly equal to vertical diameter of one eye. Antenna filiform, 11-segmented, inserted close to each to other, distance between antennal sockets subequal to diameter of one socket; moderately long, extends beyond basal 1/3 of elytra. Scape larger and thicker than second antennomere; pedicel thick, subcylindrical, approximately 1.9 times as long as wide; antennomeres 3-7 moderately thin, long, 2.3-2.0 times as long as wide, weakly widened distally; antennomeres 8-11 subequal, comparatively longer and thicker than seventh antennomere; apex of last antennomere pointed. Antennal calli weakly convex, transverse; supracallinal sulcus narrow, curved; ocular sulcus deep, straight; frontal ridge short, sharp.

Pronotum transverse, approximately 1.7 times wider than long, weakly convex; widest in anterior 1/3; covered with sparse, moderately fine punctures distinctly smaller than elytral punctures, interspaces 2-4 times larger than diameter of a puncture, covered with smooth microsculpture; basal margin of pronotum distinctly bisinuate; base of pronotum barely narrower than base of elytra; anterior angle with very long seta, about as long as pronotum.

Scutellum small, subtriangular, flat, with rounded apex. Elytra elongate oval, with subparallel sides in middle, moderately convex, about 1.4 times as long as wide, widest near middle. Humeral calli well developed, distinctly projecting. Elytral punctures moderately large, dense, arranged in regular striae, basal punctures larger and deeper than apical punctures; striae distinct throughout entire length of elytra; distance between punctures in striae equal to 1.0-1.5 times diameter of a puncture; interstriae flat, covered with secondary punctation especially distinct and dense in basal 1/3, and smooth microsculpture; distance between striae approximately 2.0-3.5 times diameter of a puncture. Hindwings present. Pro-, meso-, metasterna and abdomimanl ventrites with smooth microsculpture, punctation absent, except for a row of punctures on anterior and posterior margins. Prohypomera smooth. Epipleura subhorizontal, wide anteriorly, gradually narrowing posteriorly, reaching elytral apex, with row of punctures near inner margin. Abdomen with five visible ventrites; ventrites 2-5 distally with semierect fine setae, fifth ventrite laterally with thicker seatae; first ventrite longest, distinctly longer than second and third together; last ventrite approximately as long as two preceding ventrites together; basal margin of first ventrite with a row of punctures. Pygidium with punctures and semierect fine setae. Legs moderately long, thin. Metafemur distinctly swollen, covered with semierect fine setae, shagreened; metatibiae as long as metafemur, its distal half dorsally with two longitudinal lateral ridges bearing minute denticles; metatibial spur simple, moderately long, inserted submedialy; first metatarsomere twice as long as second metatarsomere, third metatarsomere bilobed. Claws appendiculate.

FIGURES 1–2. *Psyllototus doeberli* **sp. nov.**, holotype: 1—habitus, dorso-lateral view, 2—habitus, ventro-lateral view (photos by Marius Veta).



FIGURES 3–5. *Psyllototus doeberli* **sp. nov.**, holotype: 3—details of forebody, 4—antenna, 5—metatibia and metatarsus (photos by Marius Veta).

Discussion

Alticini in fossil resins are poorly known (see the checklist below): three from Baltic amber, one from Chiapas amber, three from Dominican amber, one from Oise amber, and three from Rovno amber. *P. doeberli* is the first species to be named amongst flea beetles known from the Baltic amber. Currently two genera of flea beetles are shared by both Baltic and Rovno amber (*Crepidodera* Chevrolat, 1836 and *Psyllototus*), however, no common species have been recorded which would have weakened arguments in support of the independent origin of the Rovno and Baltic ambers (Perkovsky et al. 2007, 2010). On the other hand, occurrence of common genera indicates close relationship and similar age of Rovno and Baltic ambers, as shown by Dlussky & Rasnitsyn (2009) with ants. Three recent genera (*Altica* Geoffroy, 1762, *Crepidodera*, and *Ochrosis* Foudras, 1859) and an extinct one (*Psyllototus*) are known from the Baltic amber. In Rovno amber, two extinct genera (*Manobiomorpha* Nadein and *Psyllototus*) and a recent one (*Crepidodera*) are recorded. However, identify of flea beetles in Baltic amber needs to be confirmed before valid conclusions of faunistic affinities are drawn.

Checklist of known Alticini in fossil resins

Acallepitrix sp. (Saniago-Blay & Craig 1999)
Age and locality: Dominican amber, Lower Miocene; Dominican Republic.

Altica spp. (Helm 1896; Spahr 198l; Santiago-Blay 1994)
Age and locality: Baltic amber, Upper Eocene; Russia, Poland.

Crepidocnema yantarica Moseyko, Kirejtshuk & Nel, 2010
Age and locality: Oise amber, Lowermost Eocene; France (Farm Le Quesnoy, Chevriere).

Crepidodera decolorata Nadein & Perkovsky, 2010
Age and locality: Rovno amber, Upper Eocene; Ukraine (Klesov).

Crepidodera sp. (Klebs 1910; Santiago-Blay 1994)
Age and locality: Baltic amber, Upper Eocene; Russia (Yantarny, Kaliningrad region), Poland.

Manobiomorpha eocenica Nadein in Nadein & Perkovsky, 2010
Age and locality: Rovno amber, Upper Eocene; Ukraine (Klesov).

Neocrepidodera antiqua (Gressitt, 1971) (as *Crepidodera*)
Age and locality: Chiapas amber, Middle Miocene; Mexico.

Ochrosis sp. (Klebs 1910; Spahr 198l; Santiago-Blay 1994; Ponomarenko & Kirejtshuk 2012)
Age and locality: Baltic amber, Upper Eocene; Russia (Yantarny, Kaliningrad region), Poland.

Psyllototus doeberli **sp. nov.**
Age and locality: Baltic amber, Upper Eocene; Russia (Yantarny, Kaliningrad region).

Psyllototus progenitor Nadein in Nadein & Perkovsky, 2010
Age and locality: Rovno amber, Upper Eocene; Ukraine (Klesov).

Walterianella sp. (Santiago-Blay et al. 1996)
Age and locality: Dominican amber, Lower Miocene; Dominican Republic.

Wanderbiltiana wawasita Santiago-Blay, Savini, Furth, Craig & Poinar, 2004
Age and locality: Dominican amber, Lower Miocene; Dominican Republic.

Alticinae gen. spp. (Klebs 1889; Spahr 198l; Hieke & Pietrzeniuk 1984; Santiago-Blay 1994; Kubisz 2000, 2001; Alekseev & Turkin 2007; Nadein & Perkovsky 2010; Ponomarenko & Kirejtshuk 2012)
Age and locality: Baltic amber, Upper Eocene; Russia (Yantarny, Kaliningrad region), Poland; Rovno amber, Upper Eocene; Ukraine (Klesov).

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