

The first record of Rhynchitidae (Coleoptera) from Rovno amber

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Based on a well-preserved specimen, *Pseudomesauletes groehni* **sp. n.** is described and illustrated from Upper Eocene Rovno amber (Ukraine). It is the first fossil record of Rhynchitidae from this Lagerstätte.

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1. Introduction

Rhynchitidae is an isolated group of primitive weevils, closely related to the family Attelabidae and often considered with it in the same family (Legalov 2004, 2018). The oldest members of this family are known from the Late Cretaceous (Legalov 2015). Fossil Rhynchitidae have been described from Paleogene and Neogene impressions (Legalov 2015). Several species of the extinct genus *Baltocar* Kuschel, 1992 and several species of the tribes Auletini and Rhynchitini are known from Baltic amber (Voss 1953, Riedel *et al.* 2012, Legalov 2012, 2013, 2015).

Nine species of Curculionoidea have been described from the Rovno amber (Gratshev & Perkovsky 2008, Petrov & Perkovsky 2008, 2018, Nazarenko & Perkovsky 2009, 2016, Nazarenko *et al.* 2011, Legalov *et al.* 2018, Bukejs & Legalov 2019). No Rhynchitidae were known from this fossil resin so far.

In the present paper, a new species of the genus *Pseudomesauletes* Legalov, 2001 from the

Rovno amber is described. This is the first record of Rhynchitidae in the Rovno amber and *Pseudomesauletina* in the Eocene amber.

2. Materials and methods

The examined material comes from the collection of Dr. Carsten Gröhn (Glinde, Germany) and is deposited in the Centrum of Natural History (CeNak) (formerly Geological-Paleontological Institute and Museum, GPIH) of the University of Hamburg, Germany. The amber piece was polished by hand, allowing improved views of the included specimen, and was not subjected to any supplementary fixation.

Observations of this specimen were made using a Nikon SMZ[®] 745T stereomicroscope. The photographs were taken using a Canon 70D[®] camera with a macro lens (Canon MPE-65 mm). Extended depth of field at high magnifications was achieved by combining multiple images from a range of focal planes using Helicon Fo-

cus[®] v. 6.0.18 software. Measurements were taken using an ocular micrometer (expressed in millimeters).

3. Systematic part

Rhynchitidae Gistel, 1848

Rhynchitinae Gistel, 1848

Rhynchititae Gistel, 1848

Auletini Desbrochers des Loges, 1908

Pseudomesauletina Legalov, 2003

Pseudomesauletes Legalov, 2001

Pseudomesauletes s. str.

Pseudomesauletes (Pseudomesauletes) groehni
sp. n. (Fig. 1)

Type material. Holotype: Adule female “GPIH no. 4979, coll. Gröhn no. 8590”, deposited in CeNak; Rovno amber. A complete beetle with partially exposed metathoracic wings is included in an elongate, transparent amber piece, with the dimensions of 71 × 29 mm; ventral side of the specimen is obscured by “milky” opacity. Syninclusions are absent.

Type strata. Rovno amber, Upper Eocene.

Type locality. Ukraine, Rivne Oblast.

Diagnosis. The new fossil species is similar to East Asian *Pseudomesauletes (Pseudomesauletes) uniformis* (Roelofs, 1874) but differs in the longer rostrum, which is considerably longer than pronotum, finely punctate pronotum, and antennae inserted in basal one-third of the rostral length. *Pseudomesauletes groehni* **sp. n.** is distinguished from *P. (P.) culex* (Scudder, 1893) and *P. (P.) ibis* (Wieckham, 1912) from terminal Eocene of Florissant, in the shorter and thicker rostrum, larger eyes and smaller body size.

Description. Body: Length (without rostrum) about 3.2 mm, rostrum length 1.2 mm. Dark brown, antennae, legs, anterior and posterior pronotal margins and elytra paler. Sparsely covered with fine, short semirecumbent setae.

Head: Prognathous, dorsally covered with small, sparse punctation, distance between punctures about 1.0–2.0× diameter of one puncture, ventrally with sharp transverse wrinkle; forehead wide, slightly convex; vertex slightly impressed. Rostrum long, about 8× as long as wide, 0.7× as

long as pronotal length, slightly curved (in lateral view), slightly widened to apex (in dorsal view); sparsely covered with fine punctures; apparently with longitudinal carina in basal one-third of rostral length. Mandibles externally dentated. Maxillary palpi 4-articled. Gular suture single. Compound eyes large, subspherical, strongly convex. Antennae with 11 antennomeres, not geniculate, with distinct 3-segmented club; moderately long, about 1.2× as long as rostrum length, reaching middle of pronotum, inserted about in basal one-third of rostral length, sparsely covered with semierect setae; scapus subcylindrical, 1.4× as long as wide, short, 0.7× as long as antennomere 2, antennomeres 3–5 elongate-oval, antennomere 3 longer than antennomere 2; antennomere 4 about 0.8× as long as antennomere 3, antennomeres 6–8 short, slightly dilated apically, antennal club about as long as antennomeres 5–8 combined, antennomeres 9 and 10 slightly transverse, slightly dilated apically, wide, antennomere 9 about 1.5× as wide as antennomere 8, antennomere 11 oval with tapered apex; relative length ratios of antennomeres 1–11 equal to 6-9-12-10-8-6-6-5-5-6-11.

Pronotum: Nearly as long as wide, widest medially, slightly narrowed posteriad and anteriad; densely covered with fine punctation (punctures distinctly larger and denser than punctures of head), distance between punctures less than diameter of one puncture; disc evenly convex. Prohypomera with small, dense punctation. Scutellum apparently subtriangular, small.

Elytra almost rectangular, elongated, widest behind middle, convex, not ribbed, slightly impressed medially in anterior one-third; elytral base wider than posterior pronotal margin; humeral callus weak; elytral punctation small and sparse, in basal half forming indistinct rows, intervals flat; rounded apex of elytra when both together, without large depressed spots. Epipleuron narrow.

Metaventricle and metepisternum with fine punctation.

Legs long; femora spindle-shaped, slightly flattened, covered with fine, sparse punctation; tibiae almost straight, slightly dilated distally, with fringe of dark spinula apically, lacking costate dorsal margin; tarsi long, slightly shorter than tibiae, tarsomere 1 and 2 trapezoidal, dilated



Fig. 1. *Pseudomesauletes groehni* sp. n., habitus of holotype. – a. Dorsolateral view. – b. Ventral view. Scale bar 1 mm. Photo courtesy by Jonas Damzen.

apically; tarsomere 1 not extended, tarsomere 3 deeply bilobed, terminal tarsomere elongated, subcylindrical, slightly curved; tarsal claws slightly divergent, thin, free, with long spine basally.

Abdomen. Convex, covered with fine punctation. Ventrites almost homonomous. Ventrites 1 and 2 fused. Ventrite 1 longer than ventrite 2. Ventrite 3 shorter than ventrite 2. Ventrites 4 and 5 subequal in length. Ventrite 4 shorter than ventrite 3.

Etymology. The species is named in honor of

Carsten Gröhn (Glinde, Germany), who provided us the species for the analysis.

Remarks. The specimen described here belongs to the family Rhynchitidae based on the not geniculate antennae, single gular suture, almost homonomous ventrites, narrow epipleuron, 4-articled maxillary palpi, fused ventrites 1 and 2 and not extended tarsomere 1. Slightly divergent tarsal claws suggest placement in the subfamily Rhynchitinae and externally dentated mandibles in the supertribe Rhynchititae. Rounded apex of the elytra when both together confirm the assign-

ment of the specimen to the tribe Auletini. The new species belongs to the subtribe *Pseudomesauletina* based on the tarsal claws with a spine, tibia lacking costate dorsal margin and antennae being inserted before middle of the rostrum. The body is covered with short sparse semirecumbent setae, elytra are not ribbed, elytral apices are without large depressed spots, antennomere 3 is longer than antennomere 2, antennae are inserted before the middle of the rostrum and eyes are strongly convex, which suggest placement in the genus *Pseudomesauletetes*. The specimen was assigned to the subgenus *Pseudomesauletetes s. str.* on the basis of the almost rectangular elytra and the dark brown body coloration.

4. Discussion

The tribe Auletini includes the most primitive representatives of the supertribe Rhynchititae. The subtribe *Pseudomesauletina* includes 16 genera distributed in Eurasia, Africa, North and South America, as well as on Caribbean, Madagascar, Sunda Islands and the Philippines (Legalov 2007).

Representatives of this group are not present in the Chilean-Patagonian and Australian regions. Only two species of the genus *Pseudomesauletetes* are known from the Paleogene (Legalov 2015). They are very similar to the extant North American *Pseudomesauletetes* (*Pseudomesauletetes ater* (LeConte, 1876) and are well different from *Pseudomesauletetes groehni* **sp. n.** from the Rovno amber, which is more similar to the east Palaearctic and oriental species of the genus (*Pseudomesauletetes uniformis* (Roelofs, 1874), *P. bakeri* (Voss, 1922), *P. gallensis* Legalov, 2007, *P. laosensis* Legalov, 2007, *P. nigrinus* (Voss, 1920) and *P. subpicescens* (Voss, 1933)).

It can be assumed that in the Eocene the genus *Pseudomesauletetes* was widely distributed and well differentiated. We can expect discoveries of new species in the Baltic and Oise ambers.

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