

## ***Globicornis samlandensis* sp. nov. – a new species of Megatominae (Coleoptera: Dermestidae) from Baltic amber**

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Based on a well-preserved specimen in Eocene Baltic amber, a new species *Globicornis samlandensis* sp. nov. (Coleoptera: Dermestidae) is described and illustrated. The new fossil species differs from extinct congeners in having antennomere 10 short and subtriangular with a rounded apex, and about as long as wide; while the pronotum and elytra are unicolorous dark brown, and covered with unicolorous dark setae (without patches). An updated key to fossil *Globicornis* species known from Baltic amber is also provided.

Key words: Megatomini, palaeodiversity, Paleogene, Eocene, fossil resin

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### **INTRODUCTION**

Dermestidae are well represented in Eocene Baltic amber, by 20 described species in nine genera (Háva et al. 2006a, 2006b, 2008; Zhantiev 2006; Háva 2008, 2014; Kadej & Háva 2011; Háva & Bukejs 2012;

Háva & Alekseev 2015; Háva & Damgaard 2015; Bukejs & Háva 2018), and it is among the best known coleopteran families from this fossil resin (Alekseev 2013, 2017). Four extinct species of *Globicornis* have previously been described: *G. ambericus* Háva, Prokop et Herrmann,

2006, *G. rakovici* Háva, 2008, *G. ingelehmannae* Hava et Damgaard, 2015, and *G. groehni* Bukejs et Háva, 2018. Additionally, one fossil record of *Globicornis* sp. was reported by Klebs (1910). In the current paper, a new extinct species of *Globicornis* from Baltic amber is described, illustrated, and keyed.

## MATERIAL AND METHODS

The material examined is deposited in the Palaeontology Collection of the Royal Saskatchewan Museum (Regina, Saskatchewan, Canada) [RSM, RSKM specimen prefix].

The amber piece was polished manually with emery papers of different grit sizes, allowing improved views of the included specimen, and was not subjected to any supplementary fixation.

The holotype observations were made using a Nikon SMZ 745T stereomicroscope. The photographs of the holotype were taken using a Canon 90D camera with a macro lens (Canon MPE-65 mm). Extended depth of field at high magnifications was achieved by stacking multiple images from a range of focal planes using Helicon Focus v. 6.0.18 software, and the final images were edited to create figures using Adobe Photoshop 7.0. Measurements of the holotype were made using an ocular micrometer on a stereomicroscope.

## SYSTEMATIC PALAEOLOGY

**Family Dermestidae Latreille, 1807**  
**Subfamily Megatominae Leach, 1815**  
**Tribe Megatomini Leach, 1815**  
**Subtribe Megatomina Leach, 1815**  
**Genus *Globicornis* Latreille, 1829**

**Taxonomic assignment.** The specimen considered here was assigned to the genus *Globicornis* within the subtribe Megatomina, based on a combination of the following morphological characters: (1) antennae composed of ten antennomeres, and (2) protibiae without spines. It is assigned to a new fossil species within the subgenus *Globicornis* s. str. based on antennomere 10 being short, subtriangular, and with a rounded apex.

***Globicornis* (*Globicornis*) *samlandensis* sp. nov.**  
(Figs. 1–2)

**Type material.** Holotype: RSKM\_PAL\_A66 [RSM], (ex coll. Jonas Damzen JDC-10352); adult, sex unknown. An almost complete beetle (with left metatarsus missing) is included in a transparent, yellow amber piece with dimensions of 21×6 mm and a maximum thickness of 2 mm; preserved without supplementary fixation. Syninclusions: one Nematocera (Diptera) specimen, and few small stellate Fagaceae trichomes.

**Type stratum.** Baltic amber; Middle–Upper Eocene (Sadowski et al. 2017, 2020; Seyfullah et al. 2018; Bukejs et al. 2019; Kasiński et al. 2020).

**Type locality.** Yantarny settlement (formerly Palmnicken), the Sambian (Samlan) peninsula, the Kaliningrad Region, western Russia.

**Description.** Body elongate-subovoid, about 1.8× longer than wide, moderately convex; integument unicolorous dark brown (as preserved). Pubescence includes: pronotum and elytra densely covered with rather long, semierect, unicolorous dark setae (some setae seem whitish because of minute gas layer surrounding them, or separation from the surrounding amber);

ventrum with finer, recumbent, dark setation. Measurements: total body length 3.2 mm, maximum body width 1.8 mm; pronotum length 0.8 mm, pronotal maximum width 1.6 mm; elytral length 2.4 mm, elytral maximum width 1.8 mm.

Head densely covered with fine punctation. Frontal median ocellus present. Compound eyes oval, rather large, convex, and entire. Antennae with ten antennomeres, and clavate; antennae short, extending about to posterior one-third of pronotal length; three apical antennomeres forming compact club, slightly longer than combined length of antennomeres 2–7; scape subcylindrical, elongate, large; antennomere 2 hemispherical, shorter and narrower than scape, and distinctly wider than antennomere 3; antennomeres 3–7 small, subquadrate to transverse; antennomere 8 trapezoidal, distinctly dilated apically, transverse, 1.25× wider than long, and markedly larger than antennomere 7; antennomere 9 trapezoidal, weakly dilated apically, transverse, 1.5× wider than long, as long as antennomere 8; antennomere 10 subtriangular with rounded apex, about as long as wide, slightly narrower than antennomere 9, short, about 1.25× as long as antennomere 9.

Pronotum strongly transverse, 2.0× wider than long, bell-shaped, widest posteriorly; lateral margins of pronotum widely rounded, posterior margin bisinuate, anterior margin rounded; pronotal punctation fine and sparse, with distance between punctures distinctly larger than diameter of one puncture. Hypomeron with distinct antennal cavity; finely and densely punctate. Prosternum with dense, small punctation; forming “collar” under which mouthparts fit when head is retracted.

Scutellar shield small, triangular with pointed apex, transverse, about 1.5× wider than long, with few fine punctures,

apparently glabrous.

Elytra 1.1× longer than wide, widest within anterior one-quarter of length, narrowed posteriorly, with anterior margin deeply concave, and humeral callus weak; elytral surface densely covered with small, irregular punctation (punctures larger than pronotal punctures), distance between punctures 1.0–2.0× diameter of one puncture; interspaces with micropunctation. Epipleura narrow, slightly impressed, wider at humeri and gradually narrowing posteriorly, incomplete, not reaching elytral apex. Metaventricle with disc convex; densely covered with small punctation, distance between punctures apparently smaller than diameter of one puncture. Metepisternum wide, subrectangular, about 4.0× longer than wide, with dense and small punctures, distance between punctures smaller than diameter of one puncture.

Legs slender, rather long, covered with fine punctures and short, recumbent setae. Femora flattened, weakly spindle-shaped, with longitudinal groove ventrally. Tibia straight, subcylindrical, about 0.5× as wide as femoral width; protibia without spines, slightly shorter than meso- and metatibia. Tarsi thin, moderately long, about 0.5× as long as tibiae; protarsus slightly shorter than meso- and metatarsus. Pretarsal claws thin and rather long, free, simple.

Abdomen with five visible ventrites; ventrite 5 with widely rounded apical margin; cuticle densely covered with small punctation; relative length ratios of ventrites 1–5 equal to 11:11:9:8:10 (measured medially).

**Differential diagnosis.** *Globicornis samlandensis* sp. nov. differs from other extinct species of the genus (*G. americus*, *G. ingelehmannae*, *G. groehni*, and *G. rakovici*) in possessing a combination of the following characters: (1) antennomere 10

subtriangular with rounded apex, about as long as wide, short, not longer than antennomeres 8 and 9 combined; (2) pronotum and elytra unicolorous dark

brown, and covered with unicolorous dark setae (without patches). See also key below.



Fig. 1. *Globicornis samlandensis* sp. nov., holotype, No RSKM\_PAL\_A66 [RSM]: A – habitus, dorsal view; B – habitus, ventral view.

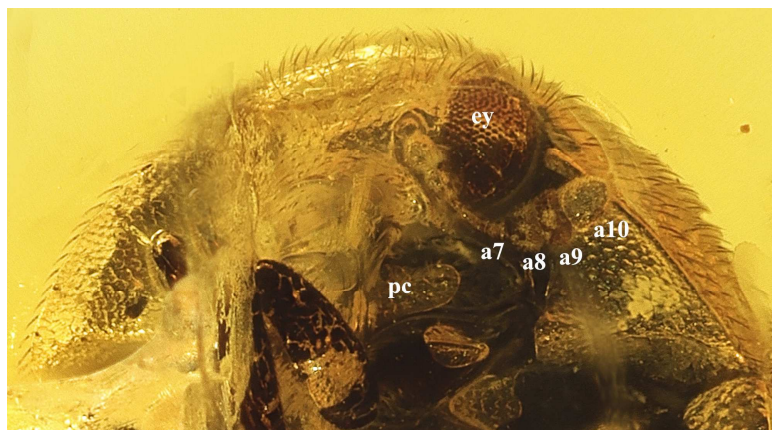


Fig. 2. *Globicornis samlandensis* sp. nov., holotype, No RSKM\_PAL\_A66 [RSM], details of forebody, ventral view. Abbreviations: a7–a10 – antennomeres 7–10 respectively; ey – compound eye; pc – prosternal “collar”.

**Etymology.** The species name “samlandensis” is toponymic and derived from “das Samland”, the German name of the Sambian peninsula, where the main deposits of Baltic amber are located, and where the amber piece with the holotype of the carpet beetle described here originated.

### KEY TO *GLOBICORNIS* SPECIES KNOWN FROM BALTIC AMBER

(according to Bukejs & Háva (2018), with modifications)

1. Antennomere 10 circular to subtriangular with rounded apex, short, not longer than combined length of antennomeres 8 and 9 ..... 2  
– Antennomere 10 triangular, long, longer than combined length of antennomeres 8 and 9 ..... 4
2. Body bicolorous, pronotum and elytra black with orange-red spots; antennomere 10 circular; body length 2.5 mm .....  
*Globicornis (Globicornis) rakovici*  
– Body unicolorous, dark brown or black, pronotum and elytra without paler cuticular spots; antennomere 10 subtriangular with rounded apex; body length not less than 2.7 mm ..... 3
3. Pronotum and elytra with bicolorous setae: black, and yellowish to white, with paler setae forming patches; antennomere 10 transverse, about 1.5× longer than wide; body length 3.6 mm .....  
*Globicornis (Globicornis) groehni*  
– Pronotum and elytra with unicolorous dark setae, without patches; antennomere 10 about as long as wide; body length 3.2 mm .....  
*Globicornis (Globicornis) samlandensis* sp. nov.
4. Body covered with white setation; pronotum less transverse, 1.8× wider than long; body length 3.0 mm .....  
*Globicornis (Hadrotoma) americus*

– Body covered with black setation; pronotum more transverse, 2.3× wider than long; body length 2.7 mm .....  
*Globicornis (Hadrotoma) ingelehmannae*

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