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First fossil Lamprosomatinae leaf beetles (Coleoptera: Chrysomelidae) with descriptions of new genera and species from Baltic amber

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Abstract

In the current paper the first fossil representatives of leaf-beetles from the subfamily Lamprosomatinae (Coleoptera: Chrysomelidae) are described and illustrated from Upper Eocene Baltic amber: *Succinoomorphus warchalowskii* **gen. et sp. nov.**, *Archelamprosomius balticus* **gen. et sp. nov.**, and *Archelamprosomius kirejtshuki* **sp. nov.** A key to fossil Lamprosomatinae is provided.

Key words: Coleoptera, Chrysomelidae, Lamprosomatinae, new taxa, Baltic amber, Eocene, fossil

Introduction

The leaf-beetles (Chrysomelidae) are a large group of phytophagous Coleoptera, which is relatively well represented in the fossil record (Rasnitsyn & Quicke 2002). Representatives of 12 subfamilies, 131 genera, and 357 species were recorded from the Cretaceous to the Quaternary (Santiago-Blay 1994; Ponomarenko. & Kirejtshuk 2014). The current classification of Chrysomelidae (Bouchard *et al.* 2011) corrects this estimate to nine subfamilies (Bruchinae, Cassidinae, Chrysomelinae, Criocerinae, Cryptocephalinae, Donaciinae, Eumolpinae, Galerucinae, Lamprosomatinae) known from fossil resins. Member of Zeugophorinae is known also from Baltic amber, but this subfamily belongs to Megalopodidae. Sagrinae, Spilopyrinae, and Synetinae are not represented in fossil resins.

Amber inclusions are a good source of data about extant faunas and taxa. Recently, particular attention has been paid to the study of Chrysomelidae in fossil resins, demonstrated by a growth in interest and the publication of new descriptions (Nadein & Perkovsky 2010; Moseyko *et al.* 2010; Bukejs & Nadein 2013, 2014; Bukejs & Konstantinov 2013; Moseyko & Kirejtshuk, 2013; Poinar 2013; Bukejs 2014; Bukejs & Bezděk 2014).

Lamprosomatinae has been recorded from Eckfelder of Middle Eocene Maar (Wappler 2003) and Baltic amber (dubious record that may actually be copal; Hope 1836, Spahr 1981). The specimen (as Lamprosomatinae gen. et sp.) was only briefly described and illustrated by simple line drawings (Wappler 2003, Fig. 72, Plate 12, Fig. F). Unfortunately, no morphological evidence was provided supporting its placement in Lamprosomatinae. The illustrations show no more similarity to Lamprosomatinae than to representatives of Chrysomelinae or other beetle families. Therefore, the definitive presence of Lamprosomatinae in the fossil record is doubtful.

In the current paper, the first fossil representatives of Lamprosomatinae are described and illustrated from the Upper Eocene Baltic amber of Kaliningrad Region, Russia.

Material and methods

The type material is currently housed in the private collection of Andris Bukejs (Daugavpils, Latvia), but will be

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deposited in the Institute of Systematic Biology, Daugavpils University (Daugavpils, Latvia) for permanent preservation. Observations were made using a Nikon SMZ 745T stereomicroscope. The photographs were taken using a Leica MZ12 stereomicroscope with AxioCam MRc5 digital camera and with a Zeiss Luminar 63mm lens mounted on a Canon 50D body. The descriptive terminology follows Konstantinov & Vandenberg (1996).

Baltic amber is mainly found from the southern coasts of the Baltic Sea and usually dated as the Upper Eocene. Although most estimates of the age of Baltic amber have placed it as deriving from the early Middle Eocene (Lutetian) (48.6–40.4 Ma), based largely on K-Ar dating (Ritzkowski 1997), palynological biostratigraphy of the specific region where the sample originated suggests a younger, Priabonian age (37.2–33.9 Ma) (Aleksandrova & Zaporozhets 2008). A detailed discussion of the stratigraphic basis for the age of Baltic amber deposits can be found in Perkovsky *et al.* (2007). According to Turkin (1997), Baltic amber was produced by *Pinus succinifera* (Conw.) Schub., which together with oak in the Eocene dominated the humid mixed forest cover of Northern and Central Europe. More recent work on the chemical composition of Baltic amber has also suggested that trees within the family Araucariaceae or Sciadopityaceae might be candidates for the production of this amber deposit (Langenheim 2003; Wolfe *et al.* 2009; Lambert *et al.* 2014).

Systematic palaeontology

Family Chrysomelidae Latreille, 1802

Subfamily Lamprosomatinae Lacordaire, 1848

Tribe Lamprosomatini Lacordaire, 1848

The new taxa described below belong to the tribe Lamprosomatini on the basis of a combination of characters defined by Chamorro & Konstantinov (2011) and also by Monrós (1956, 1958): abdominal ventrites with fine transverse folding on their borders (visible in *Succinoomorphus warchalowskii* sp. nov. and *Archelamprosomius balticus* sp. nov., but hidden in *Archelamprosomius kirejtshuki* sp. nov.), last abdominal ventrite not excised in shape of arc, pygidium completely covered by elytra, scutellum acutely triangular, elytral punctuation arranged in regular striae.

Succinoomorphus gen. nov.

Type species: *Succinoomorphus warchalowskii* sp. nov.

Etymology. The generic name is formed from the words "succinum"—"amber" and "*Oomorphus"*; gender masculine.

Included species. The new genus includes only the type species.

Diagnosis. Vertex with longitudinal medial groove and with groove at inner and upper margins of eye, lateral margins of pronotum concave and without carina, prohypomera concave on whole surface, epipleura with weak projection in basal 1/3, legs strongly flattened.

Description. Body broadly oval, convex. Head flat in lateral view; vertex with longitudinal medial groove. Eyes weakly notched, convex; with groove at inner and upper margins. Clypeus transverse. Antennae filiform, antennal insertions widely separated. Pronotum transverse, narrowed anteriorly and convex medially, lateral margins without carina. Intercoxal prosternal process large, procoxal cavity open posteriorly, prohypomera concave over whole surface. Scutellum triangular. Humeral calli present. Elytral punctures arranged in regular striae. Epipleura horizontal, with weak and flat projection in basal 1/3. Coxae more or less transverse. Abdomen with five visible ventrites; ventrite 1 longest, about as long as ventrites 2 and 3 combined; distal border of ventrite 5 and lateral borders of ventrites 3 and 4 with fine transverse folding. Pygidium completely covered by elytra. Legs short, femora and tibiae strongly flattened, dorsal surface of protibiae flat, ventrolateral side of meso- and metatibiae with broad groove, metafemur reaching abdominal ventrite 3, tarsal claws simple.

Comparison. This new genus differs from the fossil genus *Archelamprosomius* **gen. nov.** in possessing a

groove at upper and inner margins of eye, vertex with longitudinal median groove, lateral margins of pronotum not bordered, surface of prohypomera concave over whole surface, epipleura with weak and flat projection in basal 1/3, femora and tibiae strongly widened and flattened, protibiae with flat dorsal surface, outer ventrolateral side of meso- and metatibiae with broad groove, metafemora reached third abdominal ventrite.

Succinoomorphus **gen. nov.** resembles the recent *Oomorphus* Curtis, 1831 but differs in the slightly convex body, presence of a groove at the inner and upper margins of eye, anterior margin of pronotum narrowly convex at the middle, lateral margins of pronotum slightly concave in lateral view (while it is convex in *O. concolor* (Sturm, 1807) and absence of carina (with fine bordering in *O. concolor*), anterior margin of the pronotum with distinctly convex bordering (almost flat and very fine in *O. concolor*), prohypomera concave over whole surface (convex at anterior 2/3 in *O. concolor*), posterior margin of pronotum straight from middle to posterior angle of pronotum (curved in *O. concolor*), femora and tibiae much more flattened and widened, outer ventro-lateral side of meso- and metatibiae with distinct groove (absent in *O. concolor*), abdominal ventrite 5 shorter than two previous ventrites combined (as long as two previous ventrites in *O. concolor*). The new genus differs from *Asisia* Beždek, Löbl & Konstantinov, 2010 in the weakly notched eyes, tarsomere 4 projecting from tarsomere 3 to half of its length; from *Dorisina* Monrós, 1956 in the weakly notched eyes; from *Lychnophaes* Lacordaire, 1848 in the weakly notched eyes and narrower antennomeres 7–11; from *Lamprosomoides* Monrós, 1958 in in the presence of simple tarsal claws and the weakly notched eyes; from *Lamprosoma* Kirby, 1818, *Oomorphoides* Monrós, 1956, *Oyarzuna* Bechyné, 1950, *Scrophoomorphus* L. Medvedev, 1968, and *Xenoomorphus* Monrós, 1956 in the presence of simple tarsal claws.

***Succinoomorphus warchalowskii* sp. nov.**
(Figs 1–5, 14–16)

Types. Holotype: "Nr. 020" [white printed label], "Holotype / *Succinoomorphus warchalowskii* sp. nov. / Bukejs & Nadein des." [red printed label]; sex unknown. A rather clear complete beetle; part of the ventral side of the specimen is weakly obscured by a "milky" opacity. The specimen is embedded in a small, subrectangular amber piece (length about 30 mm, width 25 mm). No other animal or plant syninclusions are present in the studied piece of amber.

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

Type locality. Baltic Sea coast, Yantarny village [formerly Palmnicken], Kaliningrad Region, Russia.

Etymology. The epithet of this new species is devoted to our dear colleague, Andrzej Warchałowski (Wrocław, Poland), a famous specialist in Chrysomelidae.

Description. Body length 3.2 mm, maximum width 1.95 mm; broadly oval, moderately convex dorsally, flat ventrally; unicolorous black, shining; glabrous.

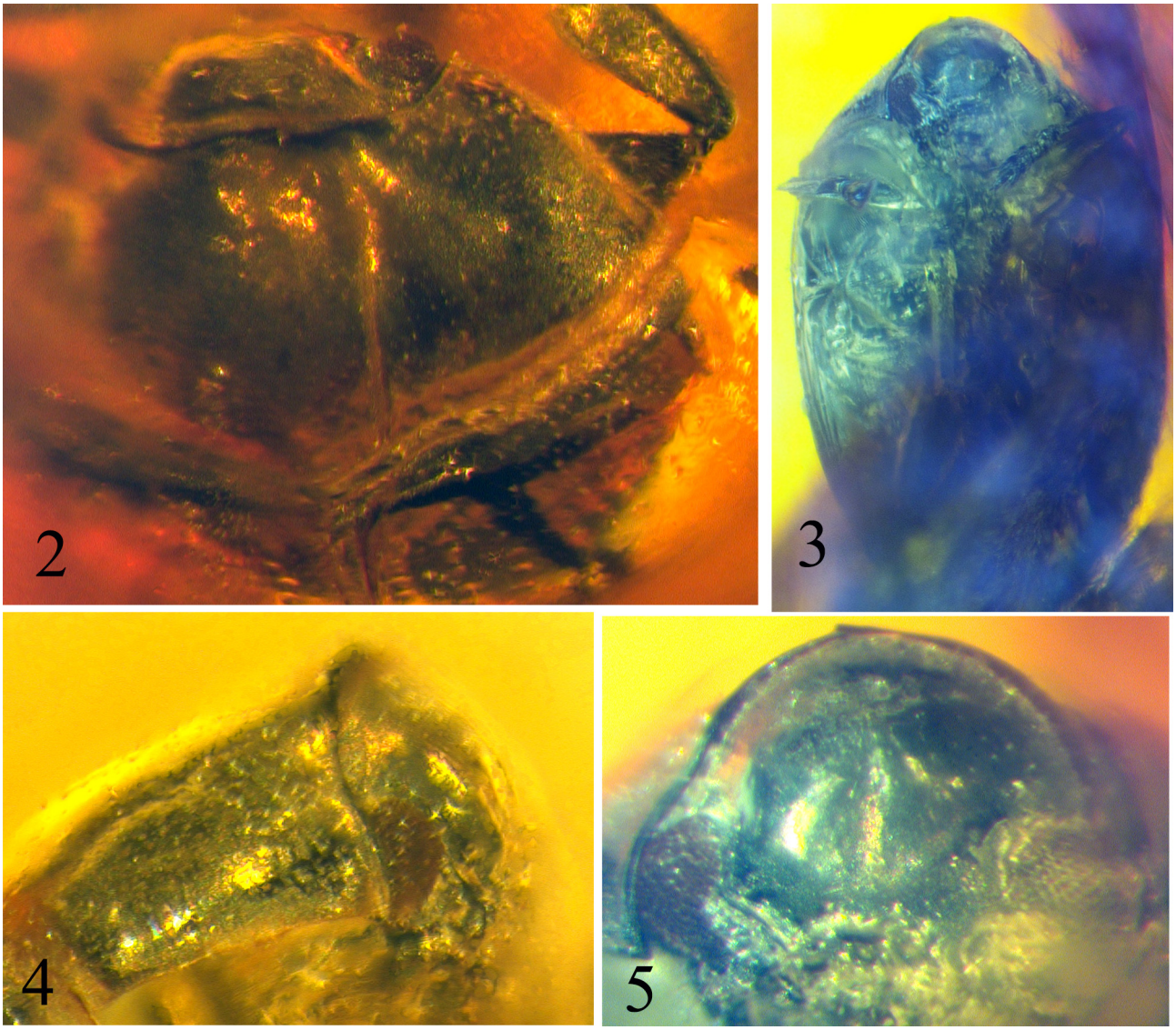
Head shining; flat in lateral view, with few fine punctures on frons and clypeus. Vertex with a broad longitudinal, medial groove. Eyes triangularly, weakly notched, relatively small (vertical diameter nearly 1/3 as great as length of lateral margin of pronotum), very convex, with distinct facets; vertical diameter 1.7 times as great as transverse diameter; with groove at upper margins of eye, canthus depressed. Distance between eyes nearly twice as great as vertical diameters of one eye. Clypeus transverse, swollen, clearly delimited from frons; frons chagreened close to upper margin of clypeus. Antennae poorly visible (because of beetle location within amber piece), filiform, short; three last antennomeres subequal in width, terminal antennomere elongate, 1.5 times as long as preceding antennomere. Antennal insertions widely separated.

Pronotum transverse, widest at base; anterior margin arcuate in frontal view, with distinct border, narrowly convex medially; lateral margins without bordering, slightly concave in lateral; posterior margin weakly sinuate; anterior angles bent ventrally and not visible from above; posterior angles right. Pronotal punctation fine, moderately dense; smooth and indistinct on disc. Intercoxal prosternal process large, medially nearly as wide as transverse diameter of eye, and as long as vertical diameter of eye; slightly longer than wide; lateral margins constricted medially, posterior margin straight. Procoxal cavity open posteriorly.

Scutellum minute, triangular. Humeral calli well developed, distinctly projecting. Elytral punctures shallow, moderately small (distinctly larger than pronotal punctures), dense, arranged in 11 regular rows on each elytron distinct throughout the entire length of elytron; distance between punctures in rows 0.5–1.5 times as great as

diameter of one puncture; intervals flat and smooth, distance between rows approximately 2.0–3.0 times as great as diameter of a puncture. Epipleura horizontal (not visible in lateral view), narrow (widest anteriorly and gradually narrowing posteriorly), with weak and flat projection in basal 1/3.

FIGURE 1. *Succinoomorphus warchalowskii* **sp. nov.**, holotype, habitus, lateral view.



FIGURES 2–5. *Succinoomorphus warchalowskii* **sp. nov.**, holotype: 2—details of forebody; 3—habitus, ventral view; 4—prothorax and head, lateral view; 5—head, frontal view.

Metepisternum strongly shagreened. External part of metaventrite weakly shagreened, posterior part smooth (with few, relatively large punctures), shiny. Metacoxae transverse, elongate.

Abdomen with ventrite 1 longest, about as long as ventrites 2 and 3 combined; ventrites 2, 3 and 4 nearly of equal length; ventrite 5 distinctly longer than preceding ventrite, its distal border and the lateral borders of the 3rd and 4th ventrites with fine transverse folding; anterior and posterior margins of all ventrites almost straight (except widely rounded apex of ventrite 5). Surface shallowly shagreened. Pygidium completely covered by elytra.

Legs relatively short. Femora and tibiae flattened, with short fine pale recumbent setae (tibiae apically with distinctly longer semi-erect setae); tibiae slightly widened apically, outer ventrolateral side of meso- and metatibiae with broad groove. Profemora ventrally with deep groove for protibiae insertion. Metafemora 1.3 times as long as metatibiae, and nearly equal in width; reaching third abdominal ventrite. Tarsomeres 1–3 of all legs distinctly dilated; tarsomere 3 deeply bilobed; tarsomere 4 projecting from tarsomere 3 to about half of its length. Tarsal claws relatively small, simple, and free. Mesofemora length / max. width = 2.8; metafemora length / max. width = 2.5. Mesotibial length / max. width = 2.7; metatibial length / max. width = 2.1. Protarsi: first tarsomere 1.2 times as wide as long; second tarsomere 1.6 times as wide as long; third tarsomere 1.9 times as wide as long; fourth tarsomere 0.3 times as wide as long.

Archelamprosomius **gen. nov.**

Type species: *Archelamprosomius balticus* sp. nov.

Etymology. The name of this new genus is formed from the Greek ”arche“—” beginning“ and part of the name Lamprosomatinae; gender masculine.

Included species. Besides the type species, the new genus includes *Archelamprosomius kirejtshuki* **sp. nov.**

Diagnosis. Vertex without medial longitudinal groove, frons without impression at inner margin of eye, lateral margins of pronotum straight and with carinate borders, prohypomera concave in posterior 1/3, epipleura strongly projecting in basal 1/3, legs weakly flattened.

Description. Body broadly oval, strongly convex; head barely visible from above, deeply protracted into prothorax; vertex slightly convex, without median groove; eyes entire, round-oval, small, convex; without groove at inner and upper margins of eye; pronotum narrowed anteriorly, all margins with carinate borders; posterior 1/3 of prohypomera strongly concave. Procoxal cavity open posteriorly. Scutellum small, triangular. Elytral punctures arranged in regular striae. Epipleura horizontal, with strongly produced and convex projection in basal 1/3. Abdomen with five visible ventrites, lateral margins of ventrites with very fine transverse folding. Legs short, femora and tibiae not strongly flattened and widened apically (in *Archelamprosomius balticus* **sp. nov.** metatibiae more distinctly widened apically), tibiae without longitudinal groove and with convex dorsal margin, metafemora extend to the abdominal ventrite 2.

Comparison. This new genus differs from the fossil genus *Succinoomorphus* **gen. nov.** in possessing a more convex body, without groove at inner and upper margins of eye, lateral margins of pronotum with distinctly carinate borders, prohypomera strongly concave in posterior 1/3, epipleura with strong and convex projection in basal 1/3, femora and tibiae weakly widened and not strongly flattened; dorsal surface of protibia convex, tibiae without groove, metafemora extending to the abdominal ventrite 2.

Archelamprosomius **gen. nov.** is similar to the recent *Oomorphoides* based on the strongly projecting basal third of the epipleura, but differs in the absence of a longitudinal groove on the vertex, frons without impression at inner margin of eyes (such impression are presents in *Oomorphoides*), lateral margins of pronotum are nearly straight in lateral view (it is distinctly convex in *Oomorphoides*), simple tarsal claws (appendiculate in *Oomorphoides*), entire eyes (they have emarginate inner margin in *Oomorphoides*). The new genus differs from *Oomorphus* in the absence of a longitudinal groove on the vertex, more protruding basal 1/3 of the epipleura, shorter and less flattened femora and tibiae. Combination of characters and differences from recent genera *Oomorphus* and *Oomorphoides* provide a basis for the establishment of this new genus, which has an intermediate position between these genera. The new genus differs from *Asisia*, *Dorisina* and *Lychnophaes* in the presence of entire eyes, without emargination; from *Lamprosoma*, *Lamprosomoides*, *Oyarzuna* and *Scrophoomorphus* it differs by having simple tarsal claws and entire eyes; and from *Xenoomorphus* in the presence of simple tarsal claws.

Archelamprosomius balticus **sp. nov.**
(Figs 6–10; 19)

Types. Holotype: “Nr. 032” [white printed label], “Holotype / *Archelamprosomius balticus* **sp. nov.** / Bukejs & Nadein des.” [red printed label]; sex unknown. A complete beetle with partly exposed hindwings covering the abdominal ventrite 5; ventral side of the specimen partly weakly obscured by a “milky” opacity. The specimen is embedded in a small, elongate amber piece (length about 31 mm, width 12 mm) containing some cracks along the beetle body. Other animals or plant syninclusions are absent in the studied amber piece.

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

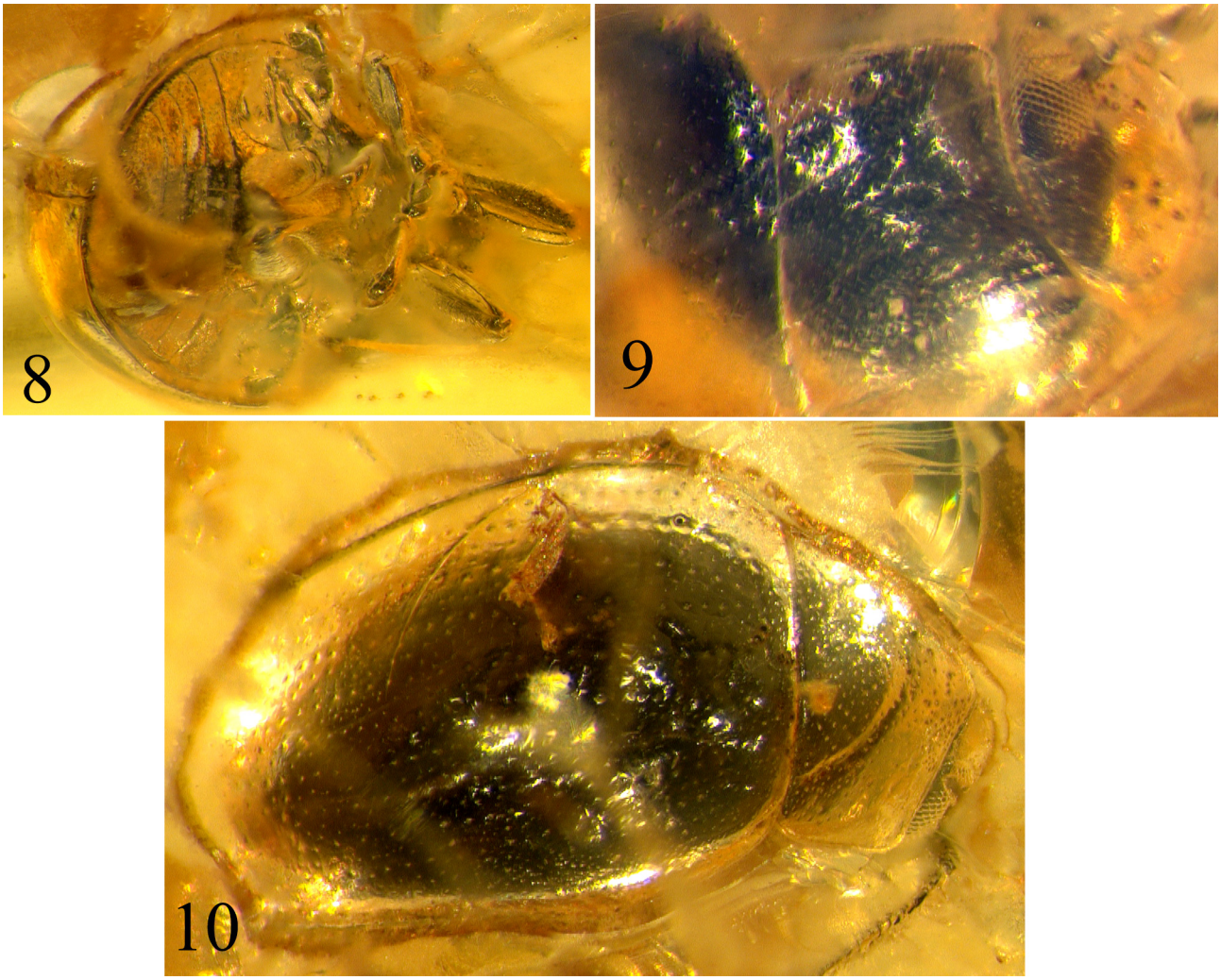
Type locality. Baltic Sea coast, Yantarny village [formerly Palmnicken], Kaliningrad Region, Russia.

Etymology. The epithet of this new species is formed from the locality of its origin.

Description. Body length ca. 3.0 mm, maximum width ca. 2.0 mm; broadly oval, strongly convex dorsally, weakly convex ventrally (abdomen flat); unicolorous black, shiny; glabrous.

Head barely visible from above, deeply retracted into prothorax; with fine, smooth punctuation, shiny; weakly convex in lateral view; vertex without longitudinal medial groove. Eyes entire, not notched, large (vertical diameter

FIGURES 6–7. *Archelamprosomius balticus* **sp. nov.**, holotype: 6—habitus, lateral view; 7—habitus, ventral view.



FIGURES 8–10. *Archelamprosomius balticus* **sp. nov.**, holotype: 8—habitus, ventro-apical view; 9—details of forebody; 10—habitus, dorso-lateral view.

somewhat smaller than length of lateral margin of pronotum), convex, with large, distinct facets; vertical diameter 2.2 times as great as transverse diameter. Distance between eyes nearly equal to the vertical diameter of one eye. Antennae slightly visible (due to opacity of amber), 11-segmented, filiform; moderately short, extending beyond base of elytra. Scape large and thick, about 2.1 times as long as pedicel; pedicel subcylindrical; anntenomere 8 approximately 0.7 times as long as antennomere 9; antennomeres 9–11 subequal in length; antennomere 11 with pointed apex. Antennal insertions separated by about 5 diameters of antennal socket.

Pronotum transverse, widest at base; lateral margins nearly straight in lateral view, anterior margin arcuate in frontal view, basal margin weakly sinuate; all margins with carinate borders; anterior angles rounded, bent ventrally and not visible from above, posterior angles almost straight. Pronotal punctation fine, dense, subuniform; distance between punctures 1–3 puncture diameter. Prohypomera shagreened. Intercoxal prosternal process large, lateral sides emarginated, anterior margin straight. Procoxal cavity open posteriorly.

Scutellum minute, triangular. Humeral calli well developed. Elytral punctures small (larger than pronotal punctures) and dense, arranged in 11 regular rows on each elytron, basal punctures larger and deeper than apical punctures; rows distinct along entire length of elytra, but in apical part punctures slightly confused; distance between punctures in rows 0.5–2.0 puncture diameters; intervals flat, with fine and shallow punctures, distinct and dense in the basal half; distance between rows 4–5 puncture diameters. Epipleura horizontal (not visible in lateral view), narrow (anteriorly wider and gradually narrowing posteriorly towards elytral apex), with strongly produced and convex projection in basal 1/3. Macropterous.

Metepisternum shagreened and with fine, dense punctures. Metaventrite depressed in posterior-lateral part, but

in the middle and anterior part weakly convex. Disc of metaventrite strongly and densely punctured, distance between punctures 1–2 puncture diameters; shining. Metacoxae transverse, elongate, narrow, distinctly narrower than maximum width of metafemora; shagreened.

Abdomen with ventrite 1 longest, about as long as ventrites 2–4 combined; ventrites 2–4 subequal in length; ventrite 5 approximately 2.5 times as long as preceding ventrite, lateral borders of ventrites with very fine transverse folding; anterior and posterior margins of all ventrites (except widely rounded apex of ventrite 5) almost straight in the middle and distinctly curved towards the apex laterally. Surface shagreened, with fine, sparse punctures (apical half of ventrite 5 covered with denser punctures) and fine, pale, short recumbent setae (especially distinct at posterior margin of ventrite 5). Ventrite 1 proximally with two wide suboval impressions for metafemora reception. Pygidium completely covered by elytra.

Legs relatively short and robust; femora and tibiae with fine punctures and shagreened. Femora and tibiae subequal in length; femora robust, swollen in the middle. Tibiae flattened, slightly widened apically, dorsal surface without groove and with short fine pale recumbent setae, apically with distinctly longer semi-erect dark setae, dorsal surface of protibia convex. Metafemora extending to abdominal ventrite 2. Tarsomeres 1–3 of all legs distinctly dilated; tarsomere 3 deeply bilobed; tarsomere 4 weakly projecting between lobes of tarsomere 3. Tarsal claws relatively large, simple and free (distinctly visible claws on left mesotarsus only).

Comparison. This new species differs from *Archelamprosomius kirejtshuki* **sp. nov.** in its shorter legs, tibiae more widened apically, finer elytral punctures, punctation represented by two types of punctures: larger in longitudinal rows and finer on intervals, puncture rows regular.

Archelamprosomius kirejtshuki sp. nov.

(Figs 11–13; 17–18)

Types. Holotype: "Nr. 033" [white printed label], "Holotype / *Archelamprosomius kirejtshuki* **sp. nov.** / Bukejs & Nadein des." [red printed label]; sex unknown. A rather complete beetle, though with missing right antenna; ventral surface of the specimen is partially obscured by a "milky" opacity. The specimen is embedded in a small, oval piece of amber (length about 26 mm, max. width 11 mm). There are few small pieces of organic material, small gas bubbles and cracks diffusely spread throughout the amber, though other animals and plant syninclusions are absent.

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

Type locality. Baltic Sea coast, Yantarny village [formerly Palmnicken], Kaliningrad Region, Russia.

Etymology. The epithet of this new species is devoted to our dear colleague, Alexander G. Kirejtshuk (St. Petersburg, Russia), an acknowledged specialist in fossil Coleoptera.

Description. Body length ca. 3.0 mm, maximum width ca. 2.0 mm; broadly oval, convex dorsally, flat ventrally; unicolorous black; glabrous.

Head with fine, smoothed punctation; flat laterally; vertex without longitudinal median groove. Eyes entire, not notched, relatively small (vertical diameter less than half as gtreat as length of lateral margin of pronotum), weakly convex, with distinct facets; vertical diameter 1.6 times as great as transverse diameter. Distance between eyes nearly as two vertical diameters of one eye. Antennae not visible.

Pronotum transverse, widest at base; lateral margins approximately straight in lateral view, anterior margin arcuate in frontal view, basal margin weakly sinuate; all margins with carinate borders; anterior angles acute, bent ventrally and not visible from above, posterior angles nearly straight. Pronotal punctation very fine, relatively sparse, subuniform; distance between punctures 3–5 puncture diameter. Prohypomera shagreened. Procoxal cavity open posteriorly. Procoxae oval, transverse.

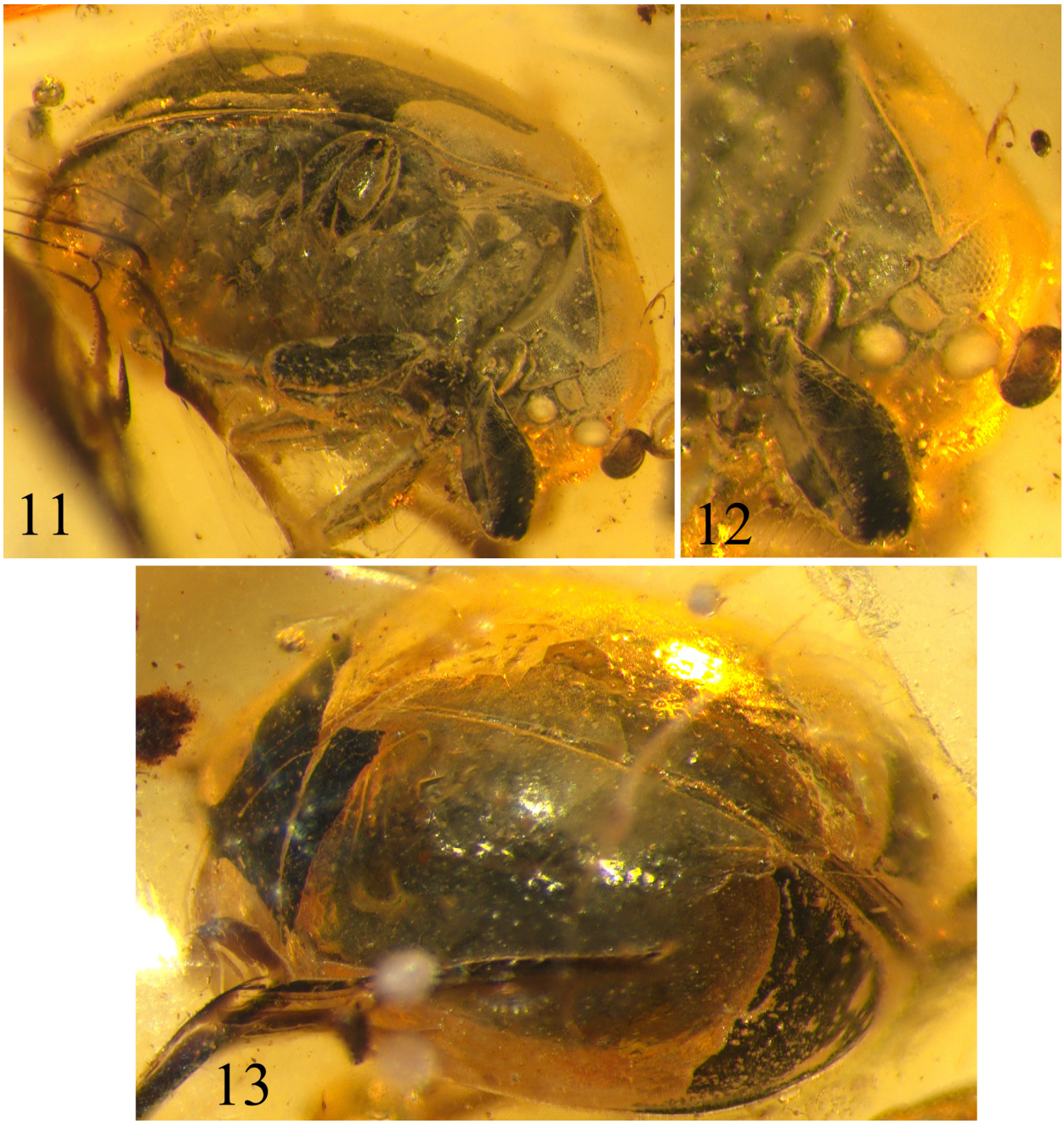
Scutellum minute, triangular with rounded apex. Humeral calli well developed. Elytral punctures moderately-sized (distinctly larger than those on pronotum), dense, punctures shallower at apex; primary punctures arranged in somewhat irregular longitudinal rows, distance between them 0.5–1.5 puncture diameter; intervals flat, with additional punctures, nearly as large as primary, confused, and slightly different from punctures in rows. Epipleura horizontal (not visible in lateral view), narrow (anteriorly wider and gradually narrowing posteriorly), with strongly produced and convex projection in anterior 1/3. Macropterous.

Metepisternum shagreened. Abdomen with ventrite 1 longest, about as long as ventrites 2–3 combined; ventrite 2 slightly longer than ventrite 3, ventrites 3–4 subequal in length; ventrite 5 approximately 1.8 times as long as preceding ventrite; anterior and posterior margins of all ventrites (except widely rounded apex of ventrite 5)

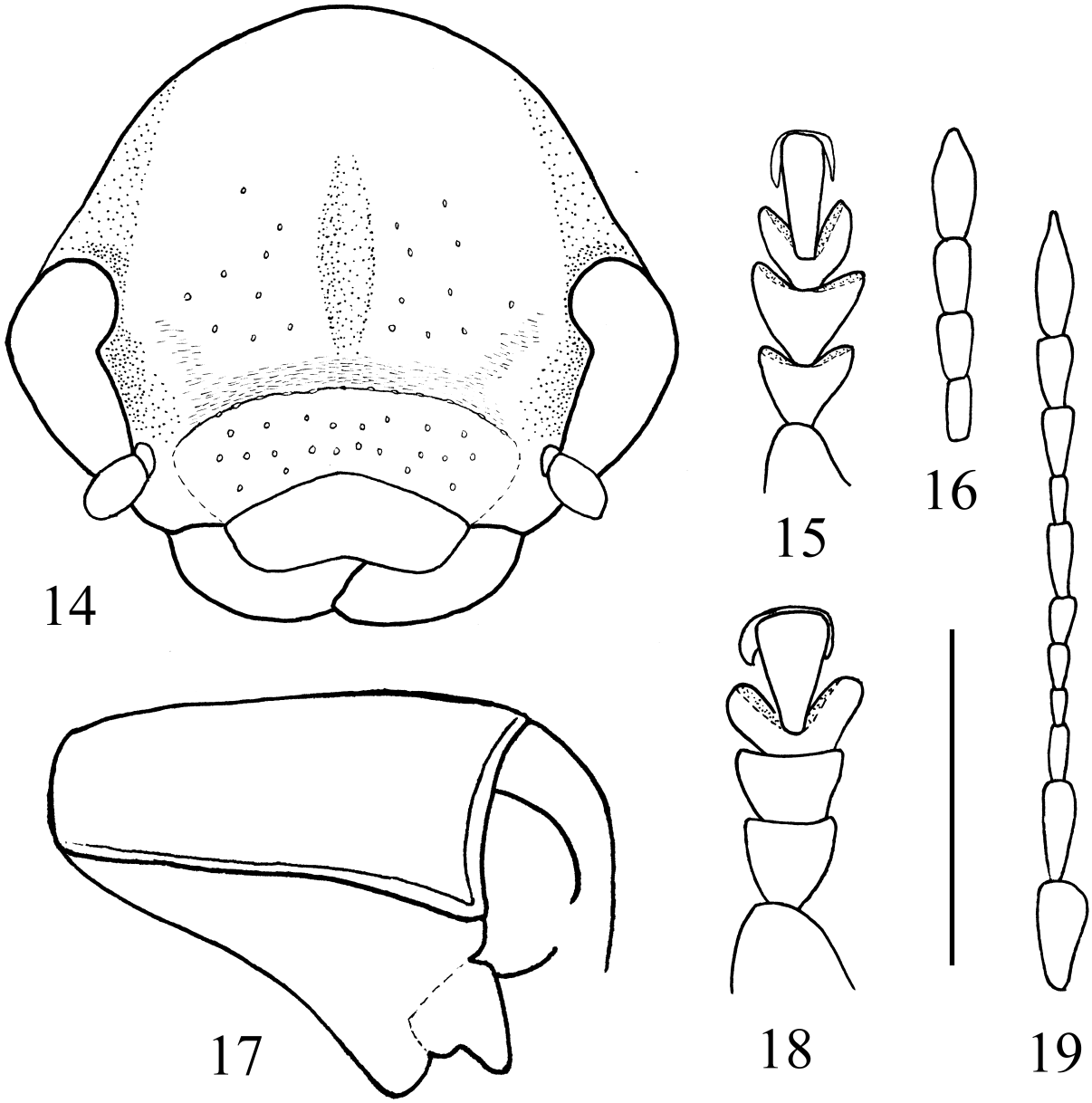
almost straight medially distinctly curved towards apex laterally. Surface shagreened, with fine, sparse punctures (ventrite 5 covered with denser punctures) and fine, pale, short, recumbent setae (especially distinct at distal margin of ventrite 5). Pygidium completely covered by elytra.

Legs relatively short and robust; femora and tibiae with fine punctures and shagreened. Femora weakly swollen in the middle. Tibiae flattened, not widened apically; with short, fine, pale, recumbent setae, apically with distinctly longer semierect pale setae. Femora and tibiae subequal in length. Tarsomeres 1–3 of all legs distinctly dilated; tarsomere 3 deeply bilobed; tarsomere 4 projecting between lobes of tarsomere 3 reaching the middle of lobes.

Comparison. This new species differs from *Archelamprosomius balticus* **sp. nov.** in its slightly longer legs, tibiae not widened apically, larger elytral punctures, strongly confused punctural rows, subuniform elytral punctation.



FIGURES 11–13. *Archelamprosomius kirejtshuki* **sp. nov.**, holotype: 11—habitus, ventro-lateral view; 12—details of forebody; 13—habitus, dorso-apical view.



FIGURES 14–19. Fossil Lamprosomatinae: 14–16—*Succinoomorphus warchalowskii* **sp. nov.**, holotype: 14—head, frontal; 15—left fore tarsus; 16—four apical antennomeres; 17–18—*Archelamprosomius kirejtshuki* **sp. nov.**, holotype: 17—head and pronotum, lateral; 18—left hind tarsus; 19—*Archelamprosomius balticus* **sp. nov.**, holotype: antenna; scale = 0.35 mm.

Key to fossil Lamprosomatinae

1. Vertex with longitudinal median groove, frons with groove at inner and upper margins of eye; eyes weakly notched; lateral margins of pronotum concave and without carina; prohypomera concave on whole surface; epipleura with weak projection in basal 1/3; legs strongly flattened. . . . . *Succinoomorphus warchalowskii*
- Vertex without longitudinal median groove, frons without groove at inner and upper margins of eye; eyes entire, not notched; lateral margins of pronotum straight and with carinate borders; prohypomera concave in posterior 1/3; epipleura with strong projection in basal 1/3; legs slightly flattened. 2
2. Legs shorter, tibiae more widened apically; eyes large; elytral punctures smaller, punctures distinctly arranged in rows intermixed by fine and obscure punctures between them, punctural rows regular . . . . . *Archelamprosomius balticus*
- Legs longer, tibiae not widened apically; eyes small; elytral punctures larger and subuniform, punctural rows confused . . . . . *Archelamprosomius kirejtshuki*

Discussion

Lamprosomatinae comprises approximately 250 species classified into 14 genera and four tribes (Chamorro 2014). The Palaearctic fauna of the subfamily includes 3 genera and 29 species (Konstantinov 2010) and belongs to the tribe Lamprosomatini. It is extremely poorly represented in the recent European fauna (the only known extant species is *Oomorphus concolor* (Sturm, 1807)). The distribution of the subfamily is mostly restricted to subtropical and tropical regions. The Lamprosomatinae of Europe in the Eocene was more diverse, and included some elements more characteristic of tropical or subtropical areas. Further changes in climate and biota resulted in faunistic changes. Thus *O. concolor* could be regarded as a relict of that time.

The new taxa described here represent the first reliable identified members of the subfamily Lamprosomatinae in the fossil record. Nine of the 12 extant Chrysomelidae subfamilies have been recorded in amber inclusions with 52 genera described or reported (with 18 extinct genera). It is interesting to note the number of extinct and recent taxa described or recorded in fossil resins (Table 1). Twelve of 15 genera recorded during the last ten years are extinct. Recent studies have shown only six extinct genera versus 32 recent ones. A further revision of specimens formerly mentioned in fossils are necessary in order to get a proper interpretation of the composition of the palaeofauna.

TABLE 1. Number of records of recent and extinct genera of Chrysomelidae from fossil resins: E—extinct, R—recent.

Subfamily/ Fossil resin	Canadian amber		Oise amber		Rovno amber		Baltic amber		Chiapas amber		Dominican amber		Total	
	E	R	E	R	E	R	E	R	E	R	E	R	E	R
Bruchinae	1										1		1	1
Cassidinae							4	2			1		4	3
Chrysomelinae					1			2			1		2	2
Criocerinae							1	1					1	1
Cryptocephalinae								1			1			2
Donaciinae								1						1
Eumolpinae			2		1		1	6	1		4		5	10
Galerucinae			1		2	1	2	10		1	3		5	15
Lamprosomatinae							2						2	
Total	1		3		4	1	10	23	1	1	1	10	20	35

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