Baltic J. Coleopterol. 19(2) 2019
ISSN 1407 - 8619

New soldier beetles (Cantharidae) from Baltic, Burmese and Dominican ambers of the Anders Damgaard amber collection

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Fanti F., Damgaard A. L. 2019. New soldier beetles (Cantharidae) from Baltic, Burmese and Dominican ambers of the Anders Damgaard amber collection. *Baltic J. Coleopterol., 19(2): 101 - 125.*

We describe and illustrate nine new fossil taxa of soldier beetles preserved in the Anders Damgaard collection (Denmark), from the major amber deposits of the world. From the Baltic amber: *Cantharis* (*Cantharis*) *borki* sp. nov., *Lycocerus jesperibuchi* sp. nov. and *Mantimalthinus bartholini* sp. nov. From the Burmese amber: *Burmomiles blixenae* sp. nov., *Sanaungulus christensenae* sp. nov., *Sanaungulus fabriciusi* sp. nov., *Sanaungulus strungei* sp. nov., and *Sanaungulus troelsikloevedali* sp. nov. From the Dominican amber: *Tytthonyx* (*Tytthonyx*) *stadili* sp. nov. that is extraordinarily well preserved, even with the original color. *Burmomiles blixenae* and *Tytthonyx stadili* are the second fossil species described of the two genera. *Sanaungulus* Fanti, Damgaard & Ellenberger, 2018 appears very rich in species during the Cretaceous in Myanmar. *Mantimalthinus bartholini* is the second representative of Malthininae that has cuticular vesical extruded from its abdominal segments.

Key words: fossil resin, Insecta, Cretaceous, Eocene, Miocene, new taxa.

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INTRODUCTION

The collection of Anders Leth Damgaard preserved at Holstebro, Denmark was already investigated, and recently two genera and two species of soldier beetles of the Cretaceous Burmese amber (Fanti et al. 2018) and also many specimens, four new genera and fifteen new species of Cantharidae of the Eocene Baltic amber (Fanti & Damgaard 2018) have been studied. Therefore, the purpose of this work is to describe other specimens (nine) found or added to the collection afterwards, coming from the three major deposits of this source: Baltic amber (Eocene), Burmese amber (Cretaceous) and Dominican amber (Miocene), and thus increasis the fossil species and knowledgements of the family Cantharidae (soldier beetles). With the species described here, in fact the number of taxa known for the Baltic amber are sixty-five (which is by far the richest deposit for the family), while fourteen are described from Burmese amber and only two species are known from Dominican amber (Fanti 2017, 2018a, 2019; Fanti & Damgaard 2018; Kazantsev 2018; Bukejs et al. 2019; Ellenberger & Fanti 2019; Fanti & Pankowski 2019; Fanti & Sontag 2019; Kupryjanowicz & Fanti 2019; Parisi & Fanti 2019a, 2019b, 2019c; Poinar & Fanti 2019). Moreover,

for all these deposits there are also various citations of taxa at the generic or family level (Baltic amber: see Fanti 2017; Burmese amber: Zhang 2017; Dominican amber: Henwood 1992; Wu 1997).

MATERIALS AND METHODS

The amber pieces with the inclusions come from the three major deposits of this resin. Baltic amber is referred to the Eocene, 33.9-47.8 mya, and it can be found along the Baltic Sea coasts, especially after the storms but in the inland area, have been opened several quarries to extract it. The specimens described here come from Gdańsk district (Wisła River), Poland, and particularly in the area which includes the villages of Mikoszewo, Jantar, Stegna and Sztutowo; or from the Yantarny mine (Kalingrad Region, Russia) in the Prussian Formation. Burmese amber comes from the Hukawng Valley in Northern Myanmar, where numerous mines are open, even though very few of them return back insect inclusions. This amber is dated to the Cretaceous, 98.79 ± 0.62 mya (Shi et al. 2012). Dominican amber comes from Cordillera Septentrional not far from Santiago and was deposited in a sedimentary basin with clastic rocks and sandstone and conglomerate fragments accumulated in a deltaic to deep-water environment (Iturralde-Vinent & MacPhee 1996, 2019). Age is controversial, initially referring to the Cretaceous and Eocene (see: Iturralde-Vinent & MacPhee 2019), and recently to the Pliocene-early Pleistocene (Braga et al. 2012) is now more accurately referred to the Miocene, 15-20 mya (Iturralde-Vinent & MacPhee 1996, 2019; Iturralde-Vinent 2001). The specimens were cut, cleaned and polished and then examined with a Nikon SMZ 745T stereomicroscope and photographed with an Imaging Source DFK 72AUC02 camera attached to a trinocular microscope. The plates were made using PhotoImpact Viewer SE. The holotypes are preserved in the amber collection of Anders Damgaard (ALDC) at Holstebro, Denmark, or in Karin Nordmann amber collection (ALDC0534/ALD.Ba.Can.26), and subsequently will be deposited in the Zoological Museum, University of Copenhagen, Denmark (ZMUC).

SYSTEMATIC PALEONTOLOGY

Order Coleoptera Linnaeus, 1758
Superfamily Elateroidea Leach, 1815
Family Cantharidae Imhoff, 1856 (1815)
Subfamily Cantharinae Imhoff, 1856 (1815)
Tribe Cantharini Imhoff, 1856 (1815)
Genus *Cantharis* Linnaeus, 1758
Subgenus *Cantharis* Linnaeus, 1758

***Cantharis* (*Cantharis*) *borki* sp. nov.**
(Figs. 1 - 2)

Holotype. Male, in Baltic amber, accession No. ALDC0534/ALD.Ba.Can.26

Type locality. Poland: Baltic Sea coast, Gdańsk, Wisła River estuary area between Mikoszewo and Sztutowo villages.

Type horizon. Middle Eocene (Lutetian) (47.8-41.2 MY) to Late Eocene (Priabonian) (37.8-33.9 MY). Prussian Formation.

Differential diagnosis. Of the genus *Cantharis* are already known two fossil species from the Miocene of Oeningen, Germany, and four taxa from the Oligocene of Rott, Germany, and also one species from the Miocene of Radoboj, Croatia (Fanti 2017). While, other five taxa from Baltic amber: *C. sucinonigra* Kuśka, 1992, *C. sucinokotejai* (Kuśka, 1996), *C. hanswerneri* Kazantsev, 2018, *C. mikkelsenorum* Fanti & Damgaard, 2018, and *C. dougi* Kupryjanowicz & Fanti, 2019 are easily distinguishables to *Cantharis borki* sp. nov. for the bigger dimensions: 6-10.5 mm and for the different color and/or pronotal shape (Kuśka 1992, 1996; Fanti & Damgaard 2018; Kazantsev 2018; Kupryjanowicz & Fanti 2019). Furthermore, *C. borki* sp. nov. is slightly bigger to *C. hoffeinsorum* Kazantsev, 2018 (4.5 mm instead of 3.3 mm) and has the pronotum less rounded at sides.

Description. Adult, winged, minute. Male on the basis of the last sternite triangular-shaped and narrower than last tergite. Dark brown with head blackish-brown and legs brown-testaceous. Body length: 4.5 mm.

Head completely exposed, elongate, covered with small punctation and several sparce and long setae. Eyes rounded, convex and prominent, inserted in the lateral part (and near the middle) of the head, inter-ocular dorsal distance about 1.8 times greater than eye diameter. Mandibles long, brown, elongate, robust, thin apically, without teeth. Maxillary palpi 4-segmented, first palpomere short and robust, second elongate and cylindrical, third shorter than previous, last segment elongate and securiform. Labial palpi 3-segmented with the last palpomere securiform. Antennae inserted not near the eyes, 11-segmented, filiform, relative short, reaching and slightly surpassing the elytral half; scape club-shaped; pedicel very short, stout and enlarged apically, 2.0 times shorter than third article; antennomere III filiform; antennomeres IV-IX filiform, subequal in length, longer than antennomere III; antennomere X filiform, shorter than previous; antennomere XI, elongate, rounded at apex; all antennomeres with long and raised setae. Pronotum as large as head, rather elongate, concave in the middle, surface smooth equipped with very long and raised setae, sides straight and slightly bordered, anterior margin rounded and not bordered, posterior margin almost straight and strongly bordered. Scutellum triangular-shaped. Elytra wider than pronotum at humeri, as wide as pronotum after the humeri, long, reaching and slightly surpassing the last abdominal segments, rounded and wider at apex, surface smooth covered by several and long setae. Posterior wings dark brown, as long as elytra, folded between the tergites and elytra. Sternum and abdominal segments dark-brown; metasternum subquadrate covered with setae, sternites transverse and pubescent, last tergite slightly elongate and rounded at apex, last sternite triangular-shaped and narrow. Legs covered with pubescence; coxae massive, elongate; trochanters inserted ventrally to the femora, elongate and rounded at apex; femora enlarged, robust, short, slightly curved; tibiae very elongate, longer than femora, cylindrical and thin; tarsi 5-segmented equipped with setae; first tarsomere elongate and slightly enlarged apically; second tarsomere about 1.7 times shorter than first; third tarsomere short, slightly bilobed at sides with lobes apically rounded and short; fourth bilobed; fifth thin and very elongate, slightly enlarged basally and apically; claws simple, very long, with short and robust tooth at the base. Aedeagus not visible. Female unknown.

Etymology. In honor of Noah Bork, a famous Danish amber collector (grandson of Karin Nordmann).

Syninclusions. Diptera (six specimens), a small spider, two cicada nymphs (one partially cut, and barely visible), several debris, and air bubbles.

Remarks. The amber piece measures 47 x 31 x 8 mm, and the inclusion is complete, and well visible. The legs are curled up under the body.

Genus *Burmomiles* Fanti, Damgaard & Ellenberger, 2018

***Burmomiles blixenae* sp. nov.**
(Figs. 3 - 4)

Holotype. Male, in Burmese amber, accession No. ALDC0530/ALD.Bu.206

Type locality. Myanmar: Kachin state, Myitkyina District, Tanai Township, Hukawng Valley.

Type horizon. Lowermost Cenomanian (98.79 ± 0.62 Ma), mid-Cretaceous.

Differential diagnosis. Currently, only one species of *Burmomiles* Fanti, Damgaard & Ellenberger, 2018 is known. *Burmomiles blixenae* sp. nov. differs from *Burmomiles willerslevorum* Fanti, Damgaard & Ellenberger, 2018 by the longest antennal processes, the last antennomere more robust, and by pronotum less expanded at sides and more straight anteriorly. Furthermore, *Burmomiles blixenae* sp. nov. has the antennomere II (pedicel) with a flat, pointed and short hint of antennal process.

Description. Adult, winged, male on the basis of the last ventrite shorter than last tergite. Entirely testaceous-brown. Body length: 6.0 mm.

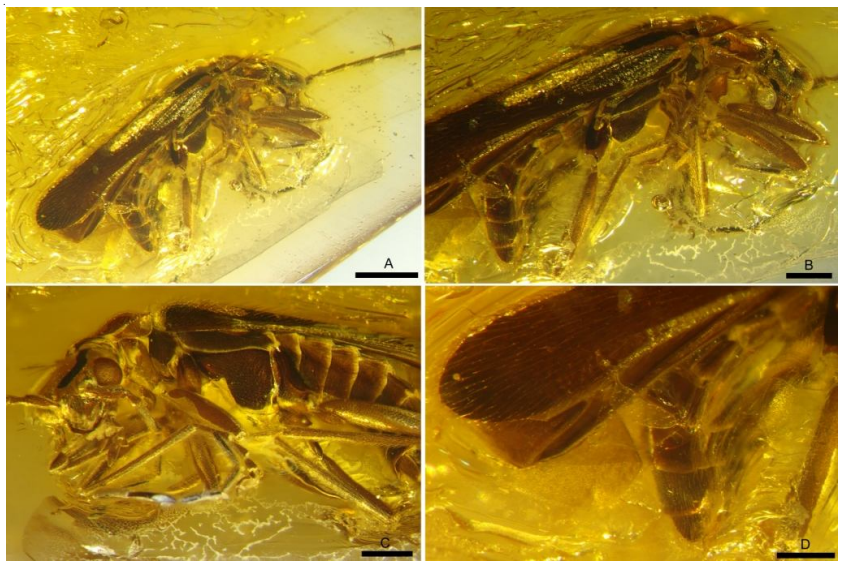

Fig. 1. *Cantharis* (*Cantharis*) *borki* sp. nov. ALDC0534/ALD.Ba.Can.26 in Baltic amber. A: Holotype, dorso-lateral view, bar = 1.0 mm; B: Holotype, lateral view, bar = 500 µm; C: Holotype, detail of head, sternum and first abdominal segments (lateral view), bar = 500 µm; D: Holotype, detail of apex of elytra, bar = 200 µm.

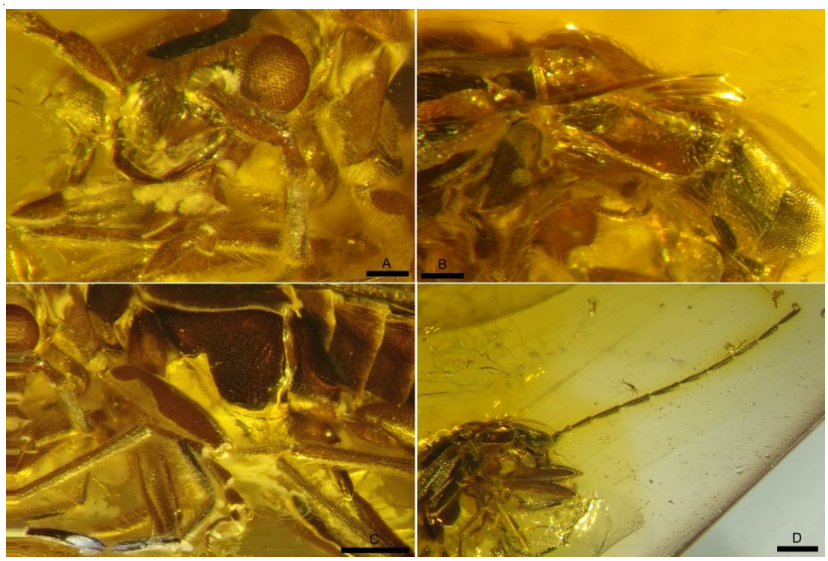

Fig. 2. *Cantharis* (*Cantharis*) *borki* sp. nov. No. ALDC0534/ALD.Ba.Can.26 in Baltic amber. A: Holotype, detail of head and palpi, bar = 100 µm; B: Holotype, detail of pronotum, bar = 200 µm; C: Holotype, detail of sternum and legs, bar = 400 µm; D: Holotype, detail of antenna, bar = 500 µm.

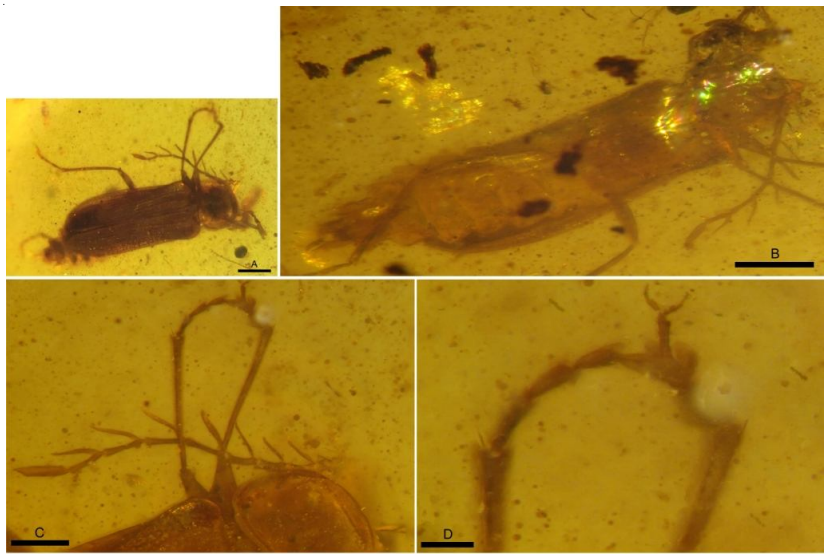

Fig. 3. *Burmomiles blixenae* sp. nov. ALDC0530/ALD.Bu.206 in Burmese amber. A: Holotype, dorsal view, bar = 1.0 mm; B: Holotype, ventral view, bar = 1.0 mm; C: Holotype, detail of the left antenna, bar = 500 µm; D: Holotype, detail of the left pro- and mesotarsomeres, bar = 200 µm.

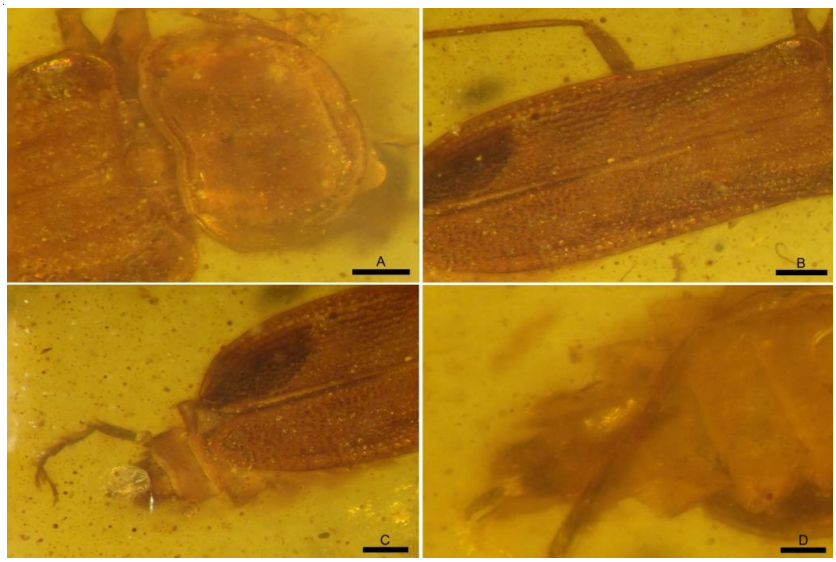

Fig. 4. *Burmomiles blixenae* sp. nov. ALDC0530/ALD.Bu.206 in Burmese amber. A: Holotype, detail of pronotum, bar = 300 µm; B: Holotype, detail of elytra, bar = 500 µm; C: Holotype, detail of last tergites, bar = 300 µm; D: Holotype, detail of last ventrites, bar = 300 µm.

Head small, rounded, convex, narrower than pronotum, with sparce pubescence. Eyes wide, sub-elliptical, strongly prominent, inserted laterally to the head, interocular dorsal distance about 3.8 times greater than eye diameter. Mandibles not well visible. Maxillary palpi 4-segmented, palpomeres unequal in length, last palpomere securiform. Labial palpi 3-segmented. Antennae relatively short, 11-segmented, pectinate, about reaching the half of the elytra but not reaching half of the abdominal length, inserted on the front and far away from the eyes; scape stout, elongate, club-shaped; pedicel very short, robust, about 3.3 times shorter than scape, with at apex a hint of antennal process that is short, flat and pointed; antennomeres III-IX elongate, subequal in length, and each of them provided of one long process at apex and inserted ventrally and slightly longer than antennal joints, the antennomeres III-V are more robust than others; antennomere X filiform without process; antennomere XI filiform, robust, enlarged, flat, with apex pointed; all antennomeres with small pubescence. Pronotum slightly transverse, anterior margin rounded, posterior margin strongly concave in the center, sides slightly enlarged and rounded, all margins bordered and before with a groove, surface flat and smooth and presenting very shallow punctation and small pubescence. Scutellum triangular-shaped with apex rounded. Elytra wider than pronotum, with prominent humeral zone, narrower near the center and enlarged near the apex, not covering last two adbominal segments and a small part of the last third, apex rounded, surface presenting dense and impressed punctation gathered in striae slightly confused. Posterior wings completely covered by elytra and slightly longer. Metasternum elongate, ventrites transverse, last sternite triangular and rounded apically and wider than last tergite which is elongate and very thin; the last urites appears as a kind of caudal appendage. Legs thin, strongly pubescent; coxae massive, rounded; trochanters elongate; femora massive, slightly curved, short except for the metafemora that are longer; tibiae long, cylindrical, thinner and longer than femora, equipped apically with spurs (one on each side); tarsal formula 5-5-5, with the first tarsomere elongate; second tarsomere slightly shorter than first; third tarsomere about 0.2 times shorter than third; fourth tarsomere bilobed; fifth tarsomere elongate; claws long, simple and enlarged basally.

Etymology. In memory of the Danish author and writer Karen Christenze von Blixen-Finecke (born Dinesen; 17 April 1885 - 7 September 1962). Dedicates that the actress Ghita Nørby suggested to us.

Syninclusions. Diptera (four specimens), debris, and small air bubbles.

Remarks. The amber piece measures 19 x 18.5 x 6 mm and the inclusion is well visible but has the right antenna folded under the body and two legs of the right side barely perceivable.

Genus *Lycocerus* Gorham, 1899

***Lycocerus jesperibuchi* sp. nov.**
(Figs. 5 - 6)

Holotype. Male, in Baltic amber, accession No. ALDC0340/ALD.Ba.Can.11

Type locality. Russia: Kaliningrad Region, Sambian Peninsula, Yantarny.

Type horizon. Middle Eocene (Lutetian) (47.8-41.2 MY) to Late Eocene (Priabonian) (37.8-33.9 MY). Prussian Formation.

Differential diagnosis. The slender appearance, the evident tooth on the claws of the forelegs and in particular the sub-quadrate pronotum make this species probably belongs to the genus *Lycocerus* Gorham, 1899. Moreover, a notable projection on the basal part of the pro- and mesotarsal claws is not present in the *Cantharis* of the subgenus *Cyrtomoptila* (Kuśka 1996; Fanti & Damgaard 2018). *Lycocerus* is a genus with several living species, but with only two fossils known from Baltic amber and described recently (Kazantsev 2018). The new species differs from *Lycocerus christelae* Kazantsev, 2018 and *Lycocerus dentantennatus* Kazantsev, 2018 for the larger dimensions, different antennomeres,

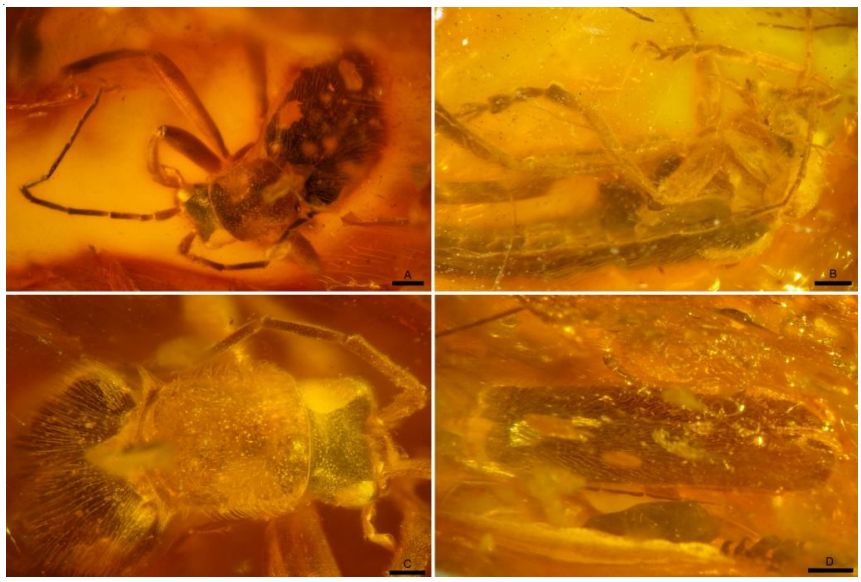

Fig. 5. *Lycocerus jesperibuchi* sp. nov. ALDC0340/ALD.Ba.Can.11 in Baltic amber. A: Holotype, dorsal view, bar = 1.0 mm; B: Holotype, lateral view, bar = 1.0 mm; C: Holotype, detail of left antenna and pronotum, bar = 500 µm; D: Holotype, detail of elytra, bar = 1.0 mm.

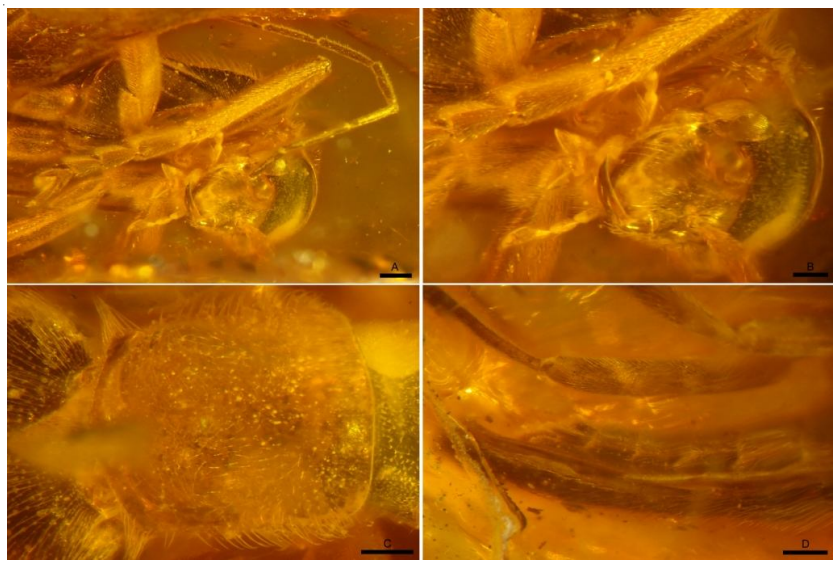

Fig. 6. *Lycocerus jesperibuchi* sp. nov. ALDC0340/ALD.Ba.Can.11 in Baltic amber. A: Holotype, detail of palpi, mandibles and right proleg, bar = 500 µm; B: Holotype, detail of palpi and mandibles, bar = 500 µm; C: Holotype, detail of pronotum and scutellar shield, bar = 500 µm; D: Holotype, detail of femur and last abdominal segments, bar = 100 µm.

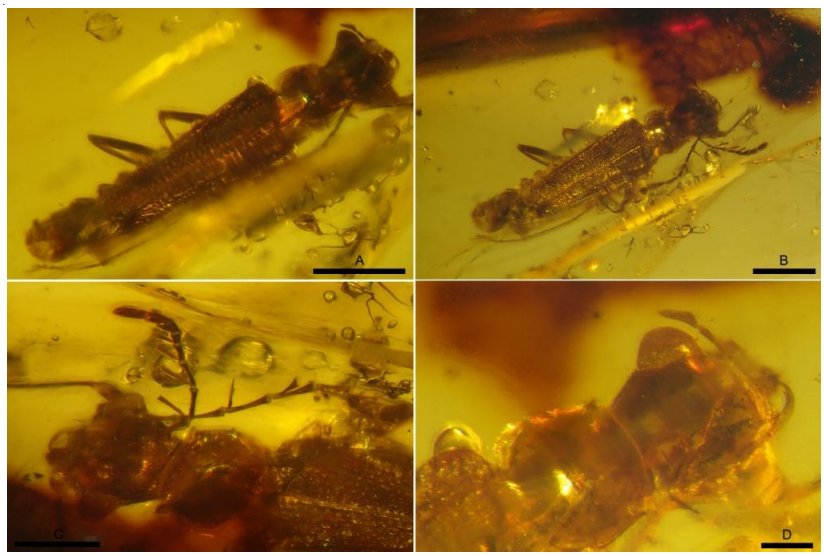

Fig. 7. *Sanaungulus christensenae* sp. nov. ALDC0528/ALD.Bu.205 in Burmese amber. A: Holotype, dorsal view, bar = 1.0 mm; B: Holotype, dorsal view, bar = 1.0 mm; C: Holotype, detail of antennae, bar = 500 μm; D: Holotype, detail of head, palp, mandible and pronotum, bar = 200 μm.

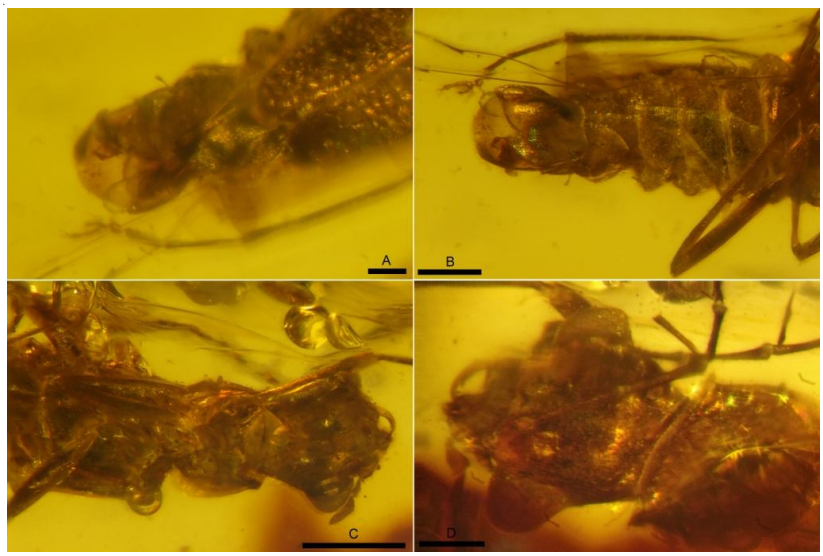

Fig. 8. *Sanaungulus christensenae* sp. nov. ALDC0528/ALD.Bu.205 in Burmese amber. A: Holotype, detail of last tergites, bar = 200 μm; B: Holotype, detail of last ventrites, bar = 200 μm; C: Holotype, detail of sternum, bar = 500 μm; D: Holotype, detail of head and pronotum, bar = 400 μm.

pronotum and color (Kazantsev 2018). Furthermore, *Lycocerus jesperibuchi* sp. nov. differs from the only fossil *Podistra* by the sub-quadrate pronotum (Fanti & Damgaard 2018) and from the fossils *Cantharis* (*s. str.*) by the pronotum not strongly transverse and with straight sides (Kuśka 1992; Kazantsev 2018; Kupryjanowicz & Fanti 2019; present work).

Description. Adult , winged, slender. Male on the basis of the slender abdomen and relative long antennae. Head and elytra blackish, pronotum and scutellar shield brown-testaceous (probably yellow in life), legs brown, antennae dark brown. Body length: 11.0 mm, elytra: 8.0 mm. Head wide, transverse, dorsally flat, not completely exposed, slightly narrower than pronotum, slightly wrinkled and covered by small and short setae. Eyes wide, convex, sub-elliptical, strongly prominent, inserted laterally and in the upper part of the head, inter-ocular dorsal distance about 3.0 times greater than eye diameter. Mandibles elongate, robust, falciform, without tooth. Maxillary palpi 4-segmented, palpomeres unequal in length, last palpomere securiform and very elongate. Labial palpi 3-segmented with the last palpomere securiform. Antennae inserted on the forehead, 11-segmented, filiform, surpassing the metathoracic legs, not reaching the elytral apex; scape club-shaped, elongate; pedicel short, stout, about 2.2 times shorter than scape; antennomere III filiform, as long as scape; antennomeres IV-V longer than antennomere III; antennomeres VI-VII short, slightly longer than scape; antennomere VIII as long as antennomeres IV-V; antennomeres IX-X progressively shorter than the previous one; antennomere XI filiform, rounded at apex; all antennomeres equipped with small setae. Pronotum nearly as long as wide (slightly elongate), subquadrate, with slightly convex anterior and posterior margin, pronotal sides slightly concave, anterior corners rounded, posterior corners almost rectangular, surface more convex basally and flat anteriorly with a groove at the posterior margin, equipped with short setae on the disc and longer setae on the sides. Scutellar shield stout, triangular-shaped, enlarged basally and with rounded apex. Elytra wider than pronotum, long, parallel-sided, rounded and narrower at apex, equipped with long and erected setae. Metathoracic wings covered by elytra. Abdomen with eight visible ventrites, transverse and pubescent. Legs stout, pubescent; coxae rounded, robust; trochanters elongate and rounded at apex; femora slightly curved, more robust than tibiae; tibiae nearly as long as femora, cylindrical, thin, equipped with spur; tarsal formula 5-5-5, with the first tarsomere robust and about 1.3 times longer than second; third tarsomere subequal in length as the second tarsomere; fourth tarsomere conspicuously widened and strongly bilobed; fifth elongate, flat; claws simple and thin with an evident basally tooth on pro- and mesoclaws and an obtuse tooth in the metaclaws. Aedeagus not visible. Female unknown.

Etymology. In honor of entrepreneur and executive chairman Jesper Buch, founder of one of the world's biggest E-commerce successes.

Syninclusions. Debris, stellate hairs of oak (*Quercus*), and one long leg (probably Diptera).

Remarks. The block is rather thick, irregular and with conchoidal fractures. Measures approximately 25 x 21 x 12 mm. The inclusion is complete, clearly visible from the front and from the left side, and slightly dorsally.

Genus *Sanaungulus* Fanti, Damgaard & Ellenberger, 2018

***Sanaungulus christensenae* sp. nov.**
(Figs. 7 - 8)

Holotype. Probably male, in Burmese amber, accession No. ALDC0528/ALD.Bu.205

Type locality. Myanmar: Kachin state, Myitkyina District, Tanai Township, Hukawng Valley.

Type horizon. Lowermost Cenomanian (98.79 ± 0.62 Ma), mid-Cretaceous.

Differential diagnosis. No fossil species of soldier beetles show the antennae with the antennomeres IV-IX with long rami. The other taxa of the genus *Sanaungulus* Fanti, Damgaard & Ellenberger, 2018 have the rami in antennomeres IV-VI, IV-VII, III-X or filiform antennae, while the genus *Burmomiles* Fanti, Damgaard & Ellenberger, 2018 has rami in the antennomeres III-IX, and has also a different shape of pronotum, head and longer and wider elytra (Fanti et al. 2018).

Description. Adult, winged, slender, probably male on the basis of the last open urites with apparently part of aedeagus visible. Entirely dark brown. Body length: 4.0 mm.

Head completely exposed, anteriorly as large as pronotum and posteriorly narrower, triangular behind the eyes, with slightly punctation and pubescence. Eyes wide, rounded, convex, strongly prominent, inserted laterally and in the upper part of the head, inter-ocular dorsal distance about 3.1 times greater than eye diameter. Mandibles very elongate, thin, apically pointed, and with a long and robust tooth to mid length. Maxillary palpi 4-segmented, palpomeres unequal in length, third palpomere thin and elongate, last palpomere elongate and slightly securiform and with apical margin rounded and upper part slightly pointed. Labial palpi 3-segmented. Antennae 11-segmented, pectinate, short, surpassing the humeral zone of the elytra, antennal insertion in proximity and in the central-upper part of the eyes; scape very stout, rather short, club-shaped; pedicel filiform, slightly robust, as long as scape; antennomere III filiform, thin, about 2.3 times longer than scape; antennomere IV as long as antennomere III, pectinate, equipped with a thin, cylindrical, truncate and almost straight apically and long antennal process inserted in the ventral-apical part; antennomeres V-VI pectinate, enlarged apically, slightly shorter than previous and equipped with a long antennal process which is squadrate apically; antennomeres VII-IX shorter, robust, each equipped with an antennal process truncate and squadrate apically; antennomeres X-XI very robust, flat and without rami; all antennomeres with small and short setae. Pronotum strongly transverse, anterior margin almost straight and strongly bordered, posterior margin slightly curved and not bordered, lateral margins rounded and restricted near the anterior margin, posterior corners rounded, surface flat, smooth and with small pubescence. Scutellum triangular-shaped, rounded apically. Elytra at humeri wider than pronotum and subsequently as wide as pronotum, very short which reveals various abdominal segments, parallel-sided, rounded at apex; surface strongly rugouse with punctation, and with some striae in very faint traces. Posterior wings slightly surpassing the elytra and not reaching the last abdominal segments. Metasternum elongate, ventrites transverse and rugouse with pubescence, last urite rounded with the tergite rounded and longer than sternite, last sternite rounded with apically a lobe at sides and concave in the middle. Legs long especially those metathoracic; coxae short; trochanters elongate and robust; femora long, more robust than tibiae; tibiae long, cylindrical, thin, longer than femora; tarsal formula 5-5-5, with the first tarsomere robust and about 2.3 times longer than second; third tarsomere very short; fourth tarsomere bilobed; fifth elongate, flat, slightly enlarged apically; claws simple.

Etymology. In memory of the Danish poet, novelist and essayist Inger Christensen (Vejle, 16 January 1935 - Copenhagen, 2 January 2009). Dedicates that the Danish artist and author Amalie Smith suggested to us.

Syninclusions. Diptera (one specimen), air bubbles, and stellate hairs.

Remarks. The amber piece measures 11 x 19.5 x 5 mm and the matrix is transparent. The inclusion is well visible.

***Sanaungulus fabriciusi* sp. nov.**
(Figs. 9 - 10)

Holotype. Probably male, in Burmese amber, accession No. ALDC0541/ALD.Bu.208

Fig. 9. *Sanaungulus fabriciusi* sp. nov. ALDC0541/ALD.Bu.208 in Burmese amber. A: Holotype, lateral view, bar = 500 µm; B: Holotype, lateral view (more detailed), bar = 500 µm; C: Holotype, ventral view, bar = 500 µm; D: Holotype, detail of head, palp, mandible and pronotum, bar = 200 µm.

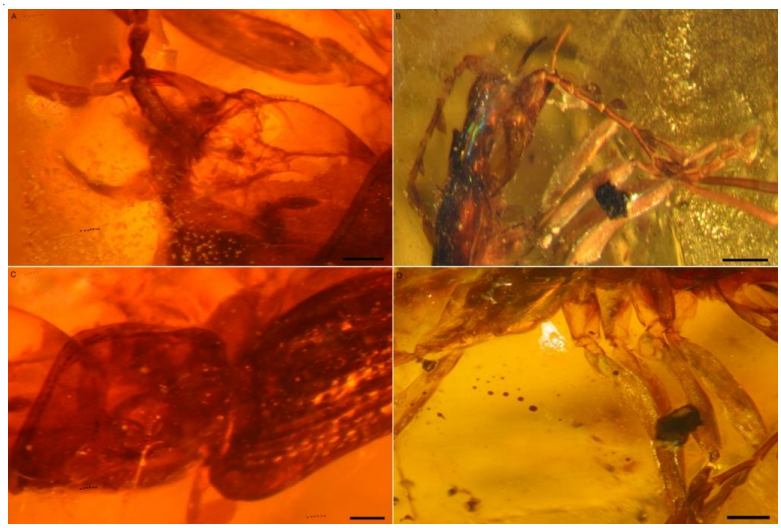

Fig. 10. *Sanaungulus fabriciusi* sp. nov. ALDC0541/ALD.Bu.208 in Burmese amber. A: Holotype, detail of mandibles and head, bar = 100 µm; B: Holotype, detail of antennae, bar = 100 µm; C: Holotype, detail of pronotum, bar = 100 µm; D: Holotype, detail of coxae, trochanters and femora, bar = 100 µm.

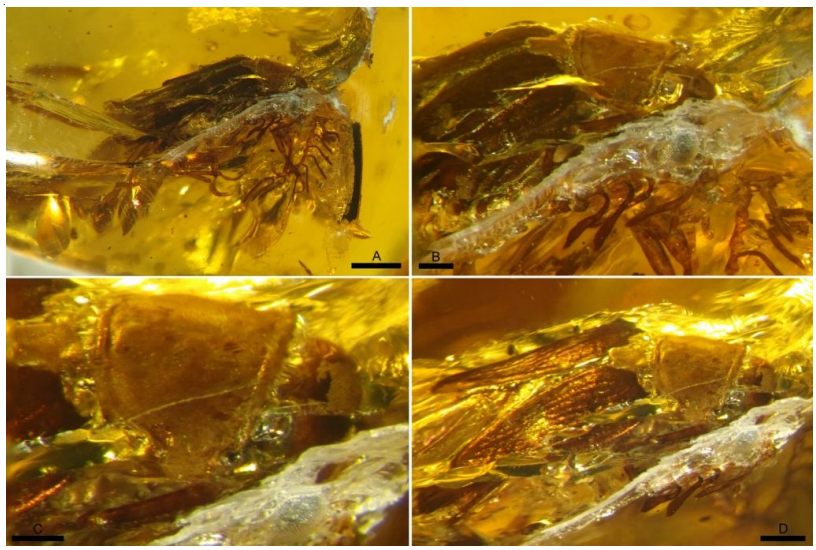

Fig. 11. *Sanaungulus strungei* sp. nov. ALDC0535/ALD.Bu.207 in Burmese amber. A: Holotype, dorso-lateral view, bar = 1.0 mm; B: Holotype, detail of pronotum and scutellar shield, bar = 200 µm; C: Holotype, detail of head and pronotum, bar = 200 µm; D: Holotype, detail of elytra, bar = 500 µm.

Fig. 12. *Sanaungulus strungei* sp. nov. ALDC0535/ALD.Bu.207 in Burmese amber. A: Holotype, dorsal view, bar = 500 µm; B: Holotype, detail of antenna, bar = 400 µm; C: Holotype, detail of legs, bar = 200 µm; D: Holotype, detail of eye and last maxillary palp, bar = 200 µm.

Type locality. Myanmar: Kachin state, Myitkyina District, Tanai Township, Hukawng Valley.

Type horizon. Lowermost Cenomanian (98.79 ± 0.62 Ma), mid-Cretaceous.

Differential diagnosis. This species is characterized by head posteriorly to the eyes strongly rounded, and triangular only at the base. No fossil species of the genus *Sanaungulus* show the antennomeres III-IX with long rami. *Burmomiles* has the the same number of rami but has longer and wider elytra, the shorter legs and roundish head.

Description. Adult, winged, probably male on the basis of the last ventrite vaguely triangular and narrower than last tergite. Testaceous-brown with elytra dark brown. Body length: 4.0 mm.

Head partially covered by head, anteriorly slightly larger than pronotum and posteriorly narrower, strongly rounded behind the eyes and triangular only at the base, without punctation and pubescence. Eyes wide, rounded, convex, strongly prominent. Mandibles extremely elongate, thin, and with a tooth. Maxillary palpi 4-segmented, palpomeres unequal in length, first palpomere slightly elongate, second robust and elongate, third palpomere of intermediate length between first and second palpomere, last palpomere very elongate and securiform and with apical margin rounded. Labial palpi 3-segmented. Antennae 11-segmented, pectinate, relative short, surpassing the half of the elytra and not reaching the half of abdomen, antennal insertion in proximity the eyes; scape very stout, elongate; pedicel filiform about 3.0 times shorter than scape; antennomere III slightly longer and wider than pedicel, equipped with a short and squadrate antennal process; antennomeres IV-VIII very elongate and thin, each equipped with a short and squadrate antennal process inserted in the ventral-apical part; antennomeres IX-XI shorter and more robust than previous ones, antennomeres X-XI without antennal processes; antennomere XI stout, rounded apically, all antennomeres feebly pubescent. Pronotum wide, anterior margin protruding to the head and strongly bordered, posterior margin slightly sinuous and bordered, lateral margins straight and strongly bordered, corners rounded, surface with shallow punctation. Scutellum triangular-shaped, rounded apically. Elytra as large as pronotum, long, with only apical part of the abdomen uncovered, parallel-sided, rounded at apex; surface strongly rugouse with punctation, and with some striae in faint traces. Posterior wings slightly surpassing the elytra and not reaching the last abdominal segments. Abdominal segments transverse, last ventrite vaguely triangular and narrower than last tergite. Legs extremely long; coxae robust and long; trochanters elongate, rounded apically; femora long, slightly curved, more robust than tibiae; tibiae long, cylindrical, thin, longer than femora; tarsal formula 5-5-5, with the first tarsomere elongate, slightly robust and about 2.5 times longer than second; third tarsomere very short; fourth tarsomere bilobed; fifth elongate, flat, slightly enlarged apically; claws simple.

Etymology. In memory of the Danish natural historian and scientist Johan Christian Fabricius (Tønder, 7 January 1745 - Kiel, 3 March 1808), one of the most important entomologists of the 18th century.

Syninclusions. Debris, air bubbles, stellate hair, and one mite.

Remarks. The amber measures 20 x 20 x 9 mm and the matrix is transparent. The inclusion is complete and very well visible.

***Sanaungulus strungei* sp. nov.**
(Figs. 11 - 12)

Holotype. Sex undefined, in Burmese amber, accession No. ALDC0535/ALD.Bu.207

Type locality. Myanmar: Kachin state, Myitkyina District, Tanai Township, Hukawng Valley.

Type horizon. Lowermost Cenomanian (98.79 ± 0.62 Ma), mid-Cretaceous

Differential diagnosis. No fossil species of soldier beetles show the antennae with the antennomeres III-X with long rami.

Description. Adult, winged, sex undefined. Head brown, pronotum and scutellum testaceus, elytra brown, antennae and legs testaceous-brown. Body length: 4.2 mm (however, head is slightly folded).

Head small, partially covered by the pronotum, anteriorly rounded, slightly triangular behind the eyes (difficult to see because folded), without punctation and pubescence. Eyes small, rounded, convex, prominent, inserted in the upper part of the head. Mandibles not well visible. Maxillary palpi 4-segmented, palpomeres unequal in length, third palpomere elongate, last palpomere securiform and flat with apex strongly rounded. Labial palpi 3-segmented. Antennae 11-segmented, pectinate, quite long, reaching the apex of elytra and about half of the body, antennal insertion in proximity of the eyes; scape stout, elongate, club-shaped; pedicel filiform, short, rounded, robust; antennomeres III-IV, pectinate, elongate, robust, cylindrical, equipped with a very long and filiform antennal process inserted ventrally and near the base, apex with an obtuse and flat denticle/expansion at side; antennomeres V-X about 0.3 times shorter than antennomere IV, each equipped with a very long and filiform process inserted ventrally and near the base, with an obtuse and flat denticle at side; antennomere XI filiform, about 2.8 times longer than antennomere X, elongate, pointed at apex, without antennal process; all antennomeres and antennal processes with small setae. Pronotum transverse, slightly convex, wider than head, surface smooth equipped with short setae, anterior margin almost straight and strongly bordered, posterior margin bordered, posterior corners strongly rounded. Scutellum triangular-shaped, rounded apically. Elytra as wide as pronotum, very short which reveals various abdominal segments, parallel-sided but narrowed at apex, surface strongly rugouse with punctation in striae. Posterior wings surpassing the elytra and not reaching the last abdominal segments. Metasternum elongate, ventrites transverse. Legs short, quite robust, equipped with several short setae; coxae short; trochanters elongate; femora very robust, slightly curved; tibiae thinner than femora, cylindrical, about 0.8 times shorter than femora, with apically a spur; tarsal formula 5-5-5, with the first tarsomere robust; second tarsomere slightly shorter than first; third tarsomere very short; fourth tarsomere bilobed; fifth elongate, flat, slightly enlarged apically; claws simple.

Etymology. In memory of the Danish poet Michael Strunge Jensen (Hvidovre, 19 June 1958 - Copenhagen, 9 March 1986). Dedicates that the Danish poet Caspar Eric suggested to us.

Syninclusions. Few small pieces of debris, one frustule of wood, air bubbles.

Remarks. The amber measures 10 x 12 x 6 mm. The inclusion is complete and visible but transparency is not exceptional and some parts are slightly covered by emulsion (palpi, head) or bubbles and stretch marks. The head is folded.

***Sanaungulus troelsikloevedali* sp. nov.**
(Figs. 13 - 14)

Holotype. Probably female, in Burmese amber, accession No. ALDC0527/ALD.Bu.204

Type locality. Myanmar: Kachin state, Myitkyina District, Tanai Township, Hukawng Valley.

Type horizon. Lowermost Cenomanian (98.79 ± 0.62 Ma), mid-Cretaceous.

Differential diagnosis. The new species is strongly similar to *Sanaungulus ghitaenoerbyae* Fanti, Damgaard & Ellenberger, 2018 for the antennomeres IV-VII with a long and thin process (“rami”), and is distinguishable by the head longer and less triangular behind the eyes, by the slender antennae, and by the pronotum straight at the anterior margin, rounded at the anterior and posterior corners (the pronotum has the anterior margin irregular and the corners more pointed in *S. ghitaenoerbyae*). Also the shape of the last antennal process is different (Fanti et

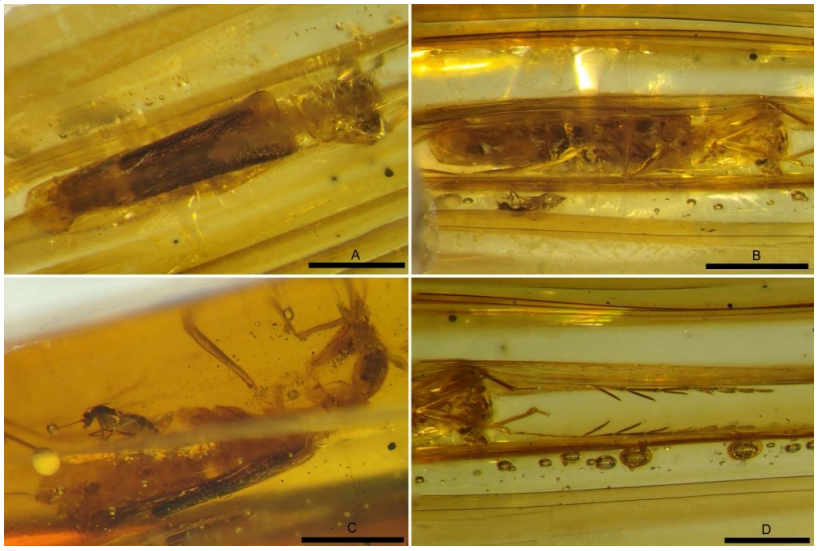

Fig. 13. *Sanaungulus troelsikloevedali* sp. nov. ALDC0527/ALD.Bu.204 in Burmese amber. A: Holotype, dorsal view, bar = 1.0 mm; B: Holotype, ventral view, bar = 1.0 mm; C: Holotype, lateral view, bar = 1.0 mm; D: Holotype, detail of antennae, bar = 1.0 mm.

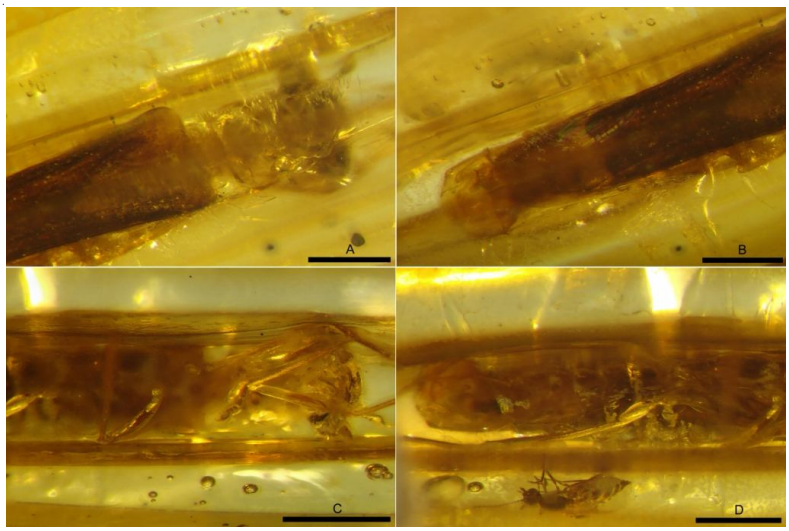

Fig. 14**.** *Sanaungulus troelsikloevedali* sp. nov. ALDC0527/ALD.Bu.204 in Burmese amber. A: Holotype, detail of prothorax and elytra, bar = 500 µm; B: Holotype, detail of apex of elytra, bar = 500 µm; C: Holotype, detail of sternum and legs, bar = 1.0 mm; D: Holoype, detail of last ventrites, bar = 500 µm.

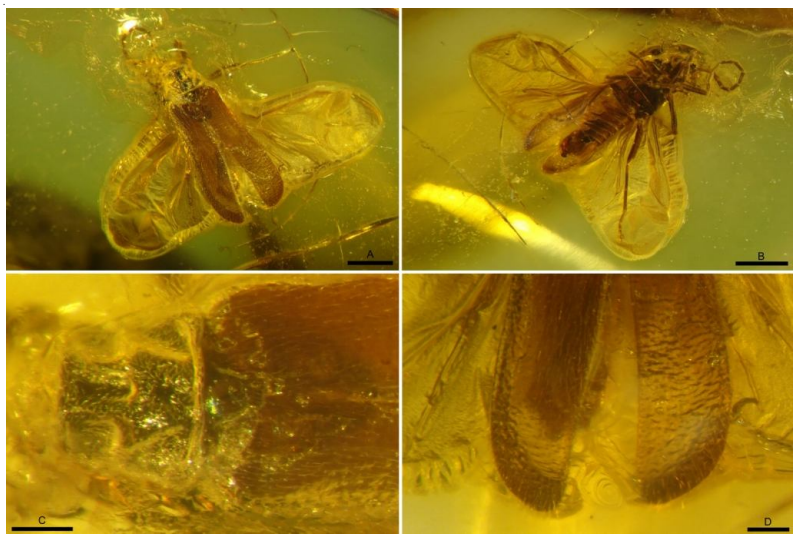

Fig. 15. *Mantimalthinus bartholini* sp. nov. ALDC0511/ALD.Ba.Can.25 in Baltic amber. A: Holotype, dorsal view, bar = 1.0 mm; B: Holotype, ventral view, bar = 1.0 mm; C: Holotype, detail of pronotum and scutellar shield, bar = 300 μm; D: Holotype, detail of the elytral apex, bar = 200 μm.

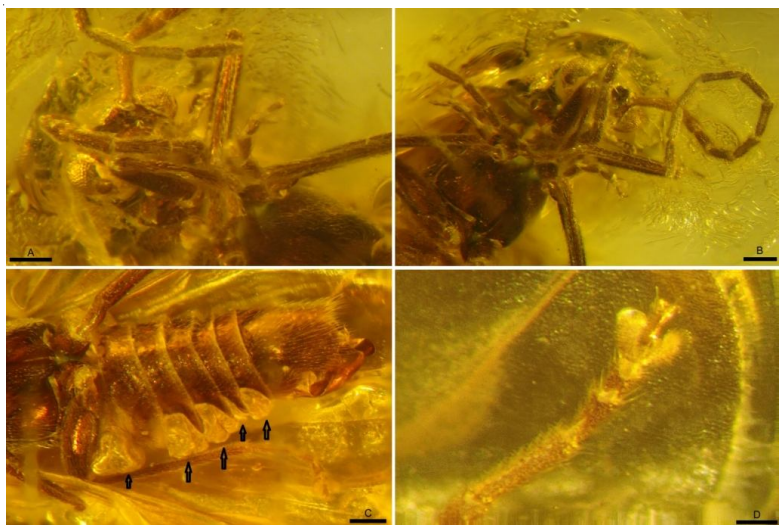

Fig. 16. *Mantimalthinus bartholini* sp. nov. ALDC0511/ALD.Ba.Can.25 in Baltic amber. A: Holotype, detail of eyes and palpi, bar = 200 μm; B: Holotype, detail of antennae and metasternum, bar = 200 μm; C: Holotype, detail of adbominal segments (arrows show the extruded vesicles), bar = 400 μm; D: Holotype, detail of leg, bar = 100 μm.

al. 2018). The other known species of *Sanaungulus* Fanti, Damgaard & Ellenberger, 2018 have a different number of antennal processes or filiform antennae (Fanti et al. 2018; Hsiao & Huang 2018). *Sanaungulus ruicheni* (Hsiao & Huang, 2018) originally attributed to the genus *Ornatomalthinus* Poinar & Fanti, 2016 (Hsiao & Huang 2018) is evidently, for the head strongly triangular behind eyes, a species of *Sanaungulus*, as indicated in Fanti (2018b).

Description. Adult, winged, probably female on the basis of the apparently large last ventrite and by the wide abdomen. Head brown, pronotum testaceous-light, elytra dark brown, legs and antennae testaceous-brown. Body length: 3.5 mm. Head very wide and elongate, larger than pronotum, triangular behind the eyes, without pubescence and punctation. Eyes wide, elliptical-elongate, strongly prominent, inserted laterally to the head, inter-ocular dorsal distance about 2.3-2.4 times greater than eye diameter. Mandibles elongate, globular at base, thin apically, apparently with a tooth. Maxillary palpi 4-segmented, palpomeres unequal in length, last palpomere strongly securiform and with straight apical margin. Labial palpi 3-segmented. Antennae 11-segmented, pectinate, reaching the apex of elytra, antennal insertion in proximity and in the upper part of the eyes; scape stout, club-shaped, enlarged and globular apically; pedicel filiform, about 1.7 times shorter than scape; antennomere III filiform, about 1.3 times longer than pedicel; antennomeres IV-V very long and thin each equipped with a long and thin antennal process inserted in the ventral-apical part; antennomere VI pectinate, slightly shorter than previous, equipped with a thin and long antennal process inserted in the ventral-apical part; antennomere VII shorter than antennomere VI, pectinate, antennal process squarish-shaped which is wide at base and thin apically; antennomere VIII filiform, without antennal process, slightly flat; antennomeres IX-X filiform, short, flat and enlarged at sides; antennomere XI filiform, rather robust. Pronotum strongly transverse, anterior margin straight, posterior margin almost straight and strongly bordered, lateral margins straight and feebly bordered, all corners strongly rounded, surface flat, smooth and without pubescence. Scutellum triangular-shaped. Elytra at humeri wider than pronotum and subsequently as wide as pronotum, very short which reveals various abdominal segments, surface rugouse with the drafts very evident and not numerous and with some striae in very faint traces. Posterior wings dark, surpassing the elytra but not reaching the last abdominal segments. Metasternum sub-quadrate, ventrites transverse and wide, last ventrite large. Legs long especially those metathoracic, slightly pubescent; coxae massive, short; trochanters very elongate and robust; femora long, slightly curved, more robust than tibiae, cylindrical; tibiae long, cylindrical, thin, longer than femora; tarsal formula 5-5-5, with the first tarsomere robust and about 1.4 times longer than second; third and fourth tarsomere equal in length, robust and slightly shorter than second tarsomere; fifth elongate and robust; claws simple and thin.

Etymology. In honor of the Danish pioneer, long-time sailor, author and lecturer Troels Kløvedal. Dedicates that the Danish journalist Puk Damsgård Andersen suggested to us.

Syninclusions. Diptera (one specimen), and air bubbles.

Remarks. The amber piece measures 5 x 4 x 15 mm and the inclusion is complete.

Subfamily Malthininae Kiesenwetter, 1852
Tribe Malthinini Kiesenwetter, 1852
Genus *Mantimalthinus* Fanti & Castiglione, 2017

***Mantimalthinus bartholini* sp. nov.**
(Figs. 15 - 16)

Holotype. Probably male, in Baltic amber, accession No. ALDC0511/ALD.Ba.Can.25

Type locality. Russia: Kaliningrad Region, Sambian Peninsula, Yantarny.

Type horizon. Middle Eocene (Lutetian) (47.8-41.2 MY) to Late Eocene (Priabonian) (37.8-33.9 MY). Prussian Formation.

Differential diagnosis. The maxillary palpi globular and pointed apically make this specimen clearly belongs to the Subfamily Malthininae Kiesenwetter, 1852. Mandibles even are not visibles, but the habitus with long elytra and the pronotal shape with the sides narrowed in the middle and the posterior margin highly bordered at the angles, make the species believe closely related to the genus *Mantimalthinus* Fanti & Castiglione, 2017. Only a fossil species of this genus is known: *Mantimalthinus balticus* Fanti & Castiglione, 2017 which differs from *M. bartholini* sp. nov. by the different length of the antennomeres, by less transverse pronotum and the last ventrite which has the margin elongate apically, where this margin is slightly concave in *M. bartholini* sp. nov. (Fanti & Castiglione 2017).

Description. Adult, winged. Probably male on the basis of the the last sternite narrower than last tergite. Brown with black pronotum. Body length: about 4.0 mm; elytra: 3.0 mm.

Head completely exposed, as large as anterior part of pronotum, rounded, with shallow punctation. Eyes convex, round, inserted on the lateral part of the head, inter-ocular dorsal distance about 1.9 times greater than eye diameter. Mandibles not visible. Maxillary palpi 4-segmented with palpomeres of different lengths, and with the last segment globular and pointed. Labial palpi 3-segmented with last palpomere globular and pointed. Antennae filiform, 11-segmented, brown, short, slightly surpassing the humeral zone and not reaching the half of the elytra, strongly pubescent; scape long, club-shaped; antennomere II about 1.25 times shorter than the scape and thickened towards the apex; antennomeres III-IV slightly shorter than antennomere II; antennomeres V–X long and subequal; antennomere XI long, filiform, with rounded apex. Pronotum transverse about 1.6 times (on the basal part) as wide as long, black, narrower than the elytra, surface flat covered with erected pubescence and without evident punctation, front margin bordered and the hind margin strongly bordered in particular at the angles, sides slightly narrowed in the middle, the hind part of the pronotum is wider than the anterior one, corners rounded. Scutellum dark brown - blackish, robust, triangular and rather elongate, with apex truncated. Elytra elongate, completely covering and surpassing the abdomen, with parallel sides and strongly rounded apex, surface strongly wrinkled equipped with long hairs and without traces of ridges. Metathoracic wings well visible, with very few veins. Metasternum subquadrate, pubescent; sternites transverse equipped with hairs and five sternites with extruded vesical (large, gray and spongy), last sternite narrower than last tergite and with apical margin slightly concave. Legs long, with numerous and thick hairs; coxae stout and rounded; trochanters elongate with rounded apex; femora short and slightly enlarged; tibiae cylindrical, longer than femora; tarsal formula 5-5-5, with the first tarsomere 2.0 times longer than second tarsomere, the third tarsomere slightly shorter than second, the fourth strongly bilobed and the fifth elongate and thin; claws simple.

Etymology. In memory of the Danish physician, mathematician and theologian Thomas Bartholin (Malmö - Scania, 20 October 1616 - Copenhagen, 4 December 1680). He theorized that amber had to come from conifers and that it had been hardened in seawater. He was therefore also one of the pioneers of Danish amber research.

Syninclusions. Few debris.

Remarks. The piece is almost flat and very transparent, and has a vaguely triangular shape. Measure 20 x 12 x 4.5 mm. Inclusion is complete, with also the metathoracic wings visible, and with only the mandibles hidden by the legs.

Subfamily Silinae Mulsant, 1862
Tribe Tytthonyxini Arnett, 1962
Genus *Tytthonyx* LeConte, 1851
Subgenus *Tytthonyx* LeConte, 1851

***Tytthonyx* (*Tytthonyx*) *stadili* sp. nov.**
(Figs. 17 - 20)

Holotype. Female, in Dominican amber, accession No. ALDC0529/ALD.Do.Can.1

Type locality. Dominican Republic: Cordillera Septentrional, La Cumbre or Los Brachos or Guazumal mining sites.

Type horizon. Late Early/Middle Miocene (20–15 MY, probably close to 16 MY). La Toca Formation.

Differential diagnosis. Today, 14 species of *Tytthonyx* live in the Dominican Republic and 19 in Hispaniola: Haiti and/or Dominican Republic (Perez-Gelabert 2008), and only one fossil of soldier beetles was described for this amber deposit (Poinar & Fanti 2016). *Tytthonyx geiseri* Poinar & Fanti, 2016 is easily distinguishable from the new species for the smaller size (about 3 mm instead of 6 mm of *Tytthonyx stadili* sp. nov.), for the head more triangular behind the eyes, the more square pronotum and less bordered at the margins and sides, and also for the different shape of the antennomeres (Poinar & Fanti 2016; Fanti 2017). The new species is here tentatively placed to the nominotypical subgenus, for the antennae slightly serrate (serrate or filiform in the females), where they are serrate in the females of the subgenus *Thinalmus* Gorham, 1881 (Ramsdale 2002; Poinar & Fanti 2016).

Description. Adult, alate, robust. Female on the basis of the last sternite. Head around the antennae and eyes black that sinuously extends posteriorly, and yellow on the palpi, mandibles and near the pronotum; antennae with eight black antennomeres and the last three yellow ones; pronotum and scutellum entirely yellow; elytra black; metathoracic wings slightly burnished; legs testaceous-yellowish (light brown); abdominal segments dark brown. Body length: 6.0 mm.
Head roundish, slightly triangular behind the eyes, completely exposed, as wide as pronotum, without punctation, totally covered by small and several setae. Eyes perfectly rounded, prominent, inserted in the lateral (and in the middle of the sides) part of the head, inter-ocular dorsal distance about 1.8-1.9 times greater than eye diameter. Mandibles long, very robust and thin apically, with tooth near the apex. Maxillary palpi 4-segmented; pubescent; palpomeres unequal in length; first palpomere robust and short; second palpomere elongate, cylindrical and enlarged in the middle; third robust, enlarged in the middle, and intermediate in length between the first two; last palpomere globular and pointed. Labial palpi 3-segmented, pubescent, with the last palpomere globular and pointed. Antennae 11-segmented, feebly serrate, short, slightly surpassing the elytral apex, reaching about the middle of the body, antennal insertion in the upper part of the head and very far from the eyes; scape very stout, club-shaped; pedicel stout, very slightly shorter than scape; antennomeres III-IV filiform, subequal in lenght and as long as pedicel; antennomeres V-IX feebly serrate (the five article very feebly); antennomere X filiform, elongate, slightly enlarged apically, thinner than previous; antennomere XI filiform, elongate, thin, rounded at apex; all antennomeres pubescent. Pronotum strongly transverse, with the margins and sides strongly bordered (particularly the anterior margin and anterior corners), without punctation, covered by small setae, surface not completely flat and slightly undulated and with longitudinal and very narrow impressed line in the centre of pronotum. Scutellum wide at base and only vaguely triangular, with apex truncate and straight. Elytra robust, as wide as pronotum, very short, slightly surpassing the metasternum and reaching the first abdominal segments, strongly rounded at apex; surface very feebly rugouse without punctation, with short setae. Posterior wings long, almost reaching the last abdominal segments. Metasternum elongate, trapezoidal, pubescent in the middle; ventrites transverse with few setae at sides; last sternite shorter than tergite, with triangular tip in the center and with a urophysis at sides starting from the penultimate sternite; last tergite slightly concave apically. Legs short and rather robust, pubescent; coxae massive; trochanters short and robust, with apically a tip rounded at apex; femora short, robust, very slightly curved; tibiae cylindrical, protibiae as long as profemora, mesotibiae

Fig. 17. *Tytthonyx stadili* sp. nov. ALDC0529/ALD.Do.Can.1 in Dominican amber. Holotype, dorsal view, bar = 1.0 mm.

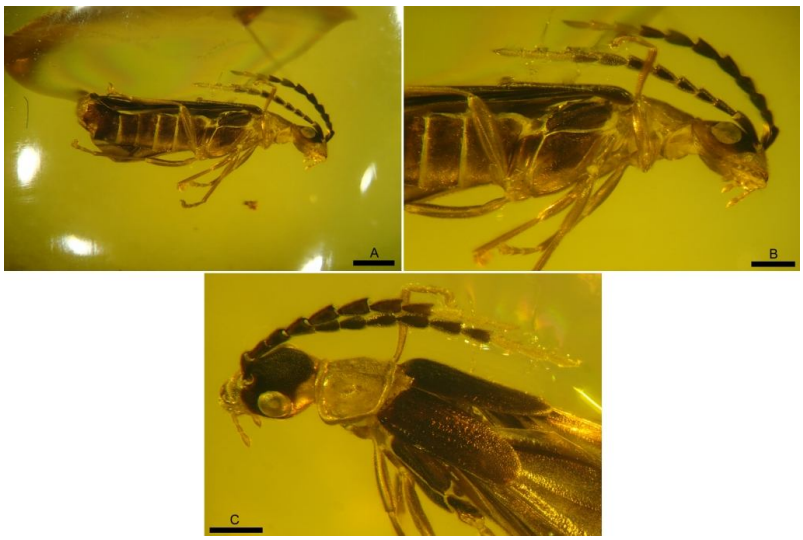

Fig. 18. *Tytthonyx stadili* sp. nov. ALDC0529/ALD.Do.Can.1 in Dominican amber. A: Holotype, lateral view, bar = 1.0 mm; B: Holotype, detail of head, pronotum (ventral view) and sternum, bar = 500 µm; C: Holotype, detail of head, antennae, pronotum and elytra, bar = 500 µm.

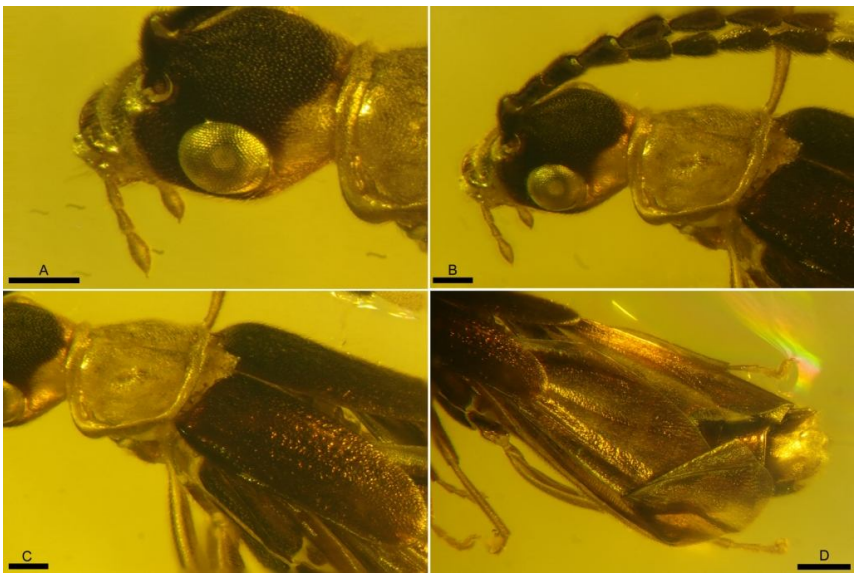

Fig. 19. *Tytthonyx stadili* sp. nov. ALDC0529/ALD.Do.Can.1 in Dominican amber. A: Holotype, detail of head, bar = 200 µm; B: Holotype, detail of head and pronotum, bar = 200 µm; C: Holotype, detail of pronotum and elytra, bar = 300 µm; D: Holotype, detail of metathoracic wings and last tergites, bar = 500 µm.

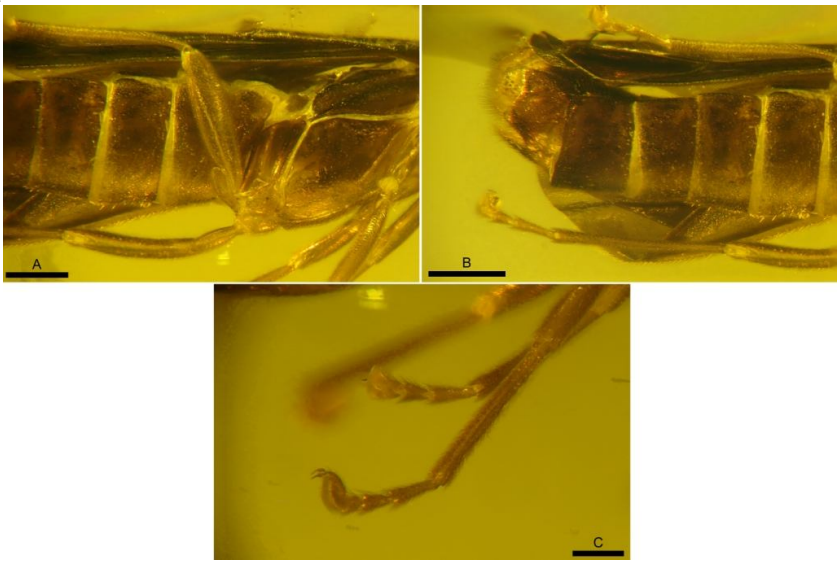

Fig. 20. *Tytthonyx stadili* sp. nov. ALDC0529/ALD.Do.Can.1 in Dominican amber. A: Holotype, detail of metasternum and ventrites, bar = 500 µm; B: Holotype, detail of last abdominal segments (ventral view), bar = 500 µm; C: Holotype, detail of legs, bar = 200 µm.

slightly longer than mesofemora, metatibiae particularly thin, longer than metafemora; tarsal formula 5-5-5; first tarsomere 1.9 times longer than second tarsomere which is short and robust; third tarsomere very short, almost globular; fourth bilobed; fifth thin and elongate; claws simple and minute.

Etymology. In honor of the owner and CEO of Thornico Group and chairman for the fashion brand Hummel, Christian Nicholas Stadil.

Syninclusions. Few debris.

Remarks. The amber piece was bought by a miner from La Cumbre and then after being polished and shaped it was used to make it a precious jewel. The amber piece is spherical-elongate and the size is 15 x 19.5 x 8 mm. The matrix has a unique and limpid transparency that allows an exceptional and surprising vision of inclusion, which is complete. In this specimen, even the original color is clearly visible.

DISCUSSION

The Baltic amber known for thousands of years has proved to be very rich in Cantharidae (soldier beetles) and can help in the understanding of biogeography and in the evolution and dispersion of the fauna, especially towards North America, and current Asia through the Strait of Turgay (Fanti 2017; Fanti & Damgaard 2018).

The Dominican amber, already known by the natives, and became famous during the 20th century for the enormous amount of well-preserved inclusions (Iturralde-Vinent 2001) can provide useful information on the development of the Hispaniola fauna, but clearly being an island environment, it is poorer in species. Only one other species of *Tytthonyx* (Poinar & Fanti 2016) has been described until now in this repository, to which are added photos of other two representatives (Wu 1997): probably a *Tytthonyx* and a *Caccodes*.

The Cretaceous ambers such as the Burmese amber (burmite), Spanish amber and Agdzhakend amber, in which only recently have been found representatives of Cantharidae (Fanti & Ellenberger 2016, 2018; Poinar & Fanti 2016; Fanti et al. 2018; Hsiao at al. 2016; Hsiao & Huang 2018; Peris & Fanti 2018; Ellenberger & Fanti 2019; Kazantsev & Perkovsky 2019), are interesting to shed light on the origin of the family.

Unfortunately, the specimens described here do not retain traces of predation or pollen and do not allow paleoenvironmental reconstructions, but it is assumed that as for the living species, the new *Cantharis* and new *Lycocerus* was predators by integrating the diet with pollen, shoots, wheat and small fruits (Fiori 1948-49; Grandi 1951; Goidanich 1954; Kang et al. 2017), while the new *Tytthonyx* was probably essentially nectarivorous (Pérez-Hernández 2018) and for *Mantimalthinus* we can only assume that it could feed on small arthropods. The genus *Sanaungulus* appears very rich in species during the Cretaceous in Myanmar. Currently, the forms of the Cretaceous (Burmese and Spanish ambers) with shortened elytra are much more numerous than the species with long elytra that covering the last abdominal segments. Hypotheses on this aspect, however, can not be definitive because there are still few known and described species.

ACKNOWLEDGEMENTS

We are particularly grateful to Karin Nordmann (Skagen, Denmark) for having kindly allowed us to study the new species of the genus *Cantharis*. We extend our thanks to Cisteil X. Pérez-Hernández (Universidad Nacional Autónoma de México, Mexico City, Mexico) for the valuable information, and to Ghita Nørby (Denmark), Amalie Smith (Denmark), Caspar Eric (Denmark), and Puk Damsgård Andersen (Denmark) for kindly suggesting some dedications.

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Received: 18.11.2019.
Accepted: 22.12.2019.
Published: 31.12.2019.

Malthodes andreasiabelei nomen novum, replaced name for *Malthodes andreasi* Fanti, 2019

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***Malthodes andreasiabelei* nomen novum**
= *Malthodes andreasi* Fanti, 2019: 90-93 *nec* Švihla, 2009: Fig. 16 (at the page 198), 210-212.

Malthodes andreasi Fanti, 2019 a species described on a fossil specimen from the Middle Eocene (47.8-38 Mya) Bitterfeld amber (= Saxonian amber) is a name preoccupied (thus homonym) by *Malthodes andreasi* Švihla, 2009 a living species from Turkey (Antalya Province, Southern Turkey). Therefore, it becomes necessary to change *Malthodes andreasi* Fanti, 2019 which I modify in *Malthodes andreasiabelei* nomen novum. This new name, like the previous one, is in honor of Andreas Abele (Museum für Naturkunde Berlin).

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Baltic Journal of Coleopterology