

**Osoriinae of Cuba with description of new species
and an identification key
(Coleoptera: Staphylinidae)**

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Abstract. Recent collections of Osoriinae from Cuba revealed three new species, *Allotrochus cubensis* sp. nov., *Thoracophorus cubensis* sp. nov., and *Antillosorius martini* sp. nov. In total, 34 species of Osoriinae are currently known from this island including the three new ones. An identification key to the species and a list of species with all records known to me are provided. According to this study 8 species (21 %) out of the 39 species are endemic for Cuba and 4 (11 %) show a pantropical distribution.

Keywords. Coleoptera, Staphylinidae, new species, key to species, distribution, Cuba, Neotropics

Introduction

PECK (2005) in his comprehensive work on the Cuban beetles gave an overview of the history of research of Cuban beetle fauna and listed all species known to occur in the island by the end of the 20th century. According to his review, 114 genera and 282 species of the family Staphylinidae occur in Cuba, of which 109 species are endemic. Forty species of the staphylinid subfamily Osoriinae occur in Cuba based on his study.

In the past years, I had the opportunity to study large amount of Osoriinae material from Cuba. These series were partly collected by Dr. František Rambousek in 1928 together with A. Bierig, and partly by Adriana Lozada Piña and Martin Fikáček within the last five years. In this material, three new species have been found, which motivated me to provide an updated overview on the Cuban Osoriinae, including an identification key. Moreover, PECK's (2005) list needs to be completed and mistakes corrected. I also briefly analyse the geographic distribution of the Cuban Osoriinae and discuss the distribution pattern of the species, in particular, the number of endemic species.

Material and methods

For the measurement of total length, the inter-segmental space of abdominal segments was considered. The lengths of individual tagmata were determined along the midline, their widths at the widest part of the respective tagmata. For the photographs of the species, a Makroskop M 420 (Wild Herbrugg) was used in combination with a digital camera (Leica EC3). CombineZ5 (HADLEY 2006) was used to optimise depth of focus.

The specimens are deposited in the following collections:

AMNH	American Museum of Natural History, New York, U.S.A.;
FMNH	Field Museum of Natural History, Chicago, U.S.A.;
HNHM	National Museum of Natural History, Budapest, Hungary;
IES	Instituto de Ecología y Sistemática, Havana, Cuba;
IRSNB	Institut royal de sciences naturelles de Belgique, Brussels, Belgium;
MCZ	Museum of Comparative Zoology, Boston, U.S.A.;
NMPC	National Museum, Prague, Czech Republic;
RYC	Alexandr Ryvkin collection, Moscow, Russia;
UIC	Ulrich Irmeler collection, Plön, Germany;
USNM	National History Museum, Washington, U.S.A.;
ZMH	Zoological Museum, Humboldt University, Berlin, Germany.

Description of new species

Allotrochus cubensis sp. nov.

(Figs 1A,C,D, 5A)

Type locality. Cuba, Sierra Maestra.

Type material. HOLOTYPE: ♂ (NMPC): ‘Cuba, N. Sierra Maestra [~20°07’N, 76°33’W], Oct. 1928, leg. Dr. Rambousek’. PARATYPES: 3 ♂♂ 4 ♀♀ (NMPC, IES, UIC): with same labels as holotype; 19 spec. (NMPC, UIC): Prov. Granma, La Platica, P.N. Turquino, saddle below La Mariposa, ca. 0.8 km SE La Platica (by air), 1050 m elevation, sifting of leaf litter and decaying wood in the low secondary evergreen forest with rather rich understory (76°52.09’W, 20°00.05’N), 24.vi.2012, leg. Deler-Hernández & M. Fikáček; 1 spec. (NMPC): same region, but La Siguapa ca. 1.5 km SE (by air) (76°52.08’W, 20°00.02’N), 1290 m elevation, sifting of leaf litter in evergreen forest, 25.vi.2012, leg. Cala-Riquelme; 7 spec. (NMPC): same region, but slope below Pico Naranjo ca. 0.4 km N La Platica (by air) (76°53.03’W, 20°00.09’N), 950 m elevation, sifting of rather dry leaf litter and decaying wood in the secondary bushes with thin litter layer, 24.vi.2012, leg. Deler-Hernández & M. Fikáček; 13 spec. (NMPC, UIC): same region, but trail to ca. 0.5 km S (by air) from La Platica (76°53.03’W, 20°00.05’N), 950 m elevation, sifting of leaf litter and decaying wood in the secondary forest with many tree ferns and rich understory vegetation, 23.–27.vi.2012, leg. Deler-Hernández & M. Fikáček.

Diagnosis. The species resembles *Allotrochus marginatus* (Sharp, 1887) in size and punctuation. It can be easily differentiated from *A. marginatus* by the distinctly rectangular shoulders that each carries a shortly prominent tooth. Furthermore, the elytra are wider and shorter in *A. cubensis* than in *A. marginatus*. Finally, the parameres are widened to the rectangular apex, whereas the parameral apex is smoothly rounded in *A. marginatus*.

Description. Length: 3.0 mm. Colouration: Light reddish; elytra and base of abdominal segments III–VII darker reddish; legs and antennae dark yellow.

Head 0.37 mm long, 0.59 mm wide; small eyes not prominent and as long as temples; lateral margin in sinuate curve from neck to beginning of slightly wider supraocular margin,

then evenly rounded in smooth curve to front edge; temples behind eyes with deep netlike microsculpture; vertex with sparse and fine punctation; distance between punctures at least twice as wide as diameter of punctures; between normal punctures with sparse micro-punctation; interstices between punctures partly with extremely weak microsculpture, but surface mostly shiny; with row of supraocular setiferous punctures; on each side, with long seta on line between posterior edge of eyes; interstice between setae nearly 10 times wider than distance of setae to eyes.

Antennae nearly as long as head and pronotum combined; first antennomere thick, more or less rectangular, and as long as second and third combined; second antennomere globular; third triangular; antennomeres 4 to 6 more or less quadrate; antennomeres 7 to 10 wider than long and with apical crown of short bristles; all antennomeres with apical setae.

Pronotum 0.56 mm long, 0.78 mm wide; widest in anterior half; slightly narrowed to obtusely rounded anterior angles; evenly narrowed to posterior angles; anterior angles slightly prominent; thus, front edge slightly emarginate; lateral margin distinct; beginning at posterior angles and ending at front edge including anterior angles; posterior edge not margined; punctation sparse and fine, still sparser than on head, but slightly deeper; interstices between punctures irregularly wide, but on average more than twice as wide as diameter of punctures; with sparse micro-punctation; surface without microsculpture; polished and shiny; setiferous punctures in lateral margin and at anterior edge.

Elytra 0.62 mm long, 0.82 mm wide; with distinct rectangular shoulders and slightly prominent tooth; disc with weak coriaceous ground sculpture and irregularly coarse punctation; punctures on average larger than on pronotum.

Abdomen with netlike microsculpture and moderately dense punctation; punctures distinctly coarser than on pronotum and head; tergite X widened to apex and with numerous pores; sternite X with uplifted central part at apex; apical edge of that part emarginate and with long setae.

Aedeagus with rectangular central lobe ending in obtuse apex; parameres slightly longer than central lobe; widened to apex; with more or less rectangular angles at apex.

Etymology. The specific name refers to the country of Cuba.

Distribution. This species is known from Granma and Santiago de Cuba provinces, Cuba, in the Sierra Maestra mountain range.

Antillosorius martini sp. nov.

(Figs 4A,E,F, 10A)

Type locality. Cuba, Guantánamo province, El Yunque, 20°12'N, 74°34'W.

Type material. HOLOTYPE: ♂ (NMPC): Prov. Guantánamo, El Yunque, ca. 2 km W of campismo popular (20°12'N, 74°34'W), ca. 350 m elevation, 11.6.2012, leg. Cala-Riqueme, Deler-Hernández & M. Fikáček.

Diagnosis. Among the other members of the genus, this species can be easily identified by the large prominent eyes.

Description. Length: 5.9 mm. Colouration: Dark brown; margin of pronotum and elytra lighter brown; abdomen reddish; legs and antennae yellow.

Head 0.81 mm long, 1.28 mm wide; eyes thick; strongly prominent; more than twice as

long as temples; sides of fore-head convergent; anterior edge of clypeus crenulate and slightly produced in smooth curve; transverse row of short yellow setae and pair of long yellow setae at anterior edge; groups of yellow setae on supraocular area including pair of long yellow setae; pair of long yellow setae on line between anterior edge of eyes; six yellow setae on transverse line between posterior edge of eyes; impunctate; netlike microsculpture deep and dense except on small area at base of antennae; surface slightly shiny.

Antennae nearly as long as head and half of pronotum combined; oval second antennomere twice as long as wide; conical third antennomere still slightly longer than second; following antennomeres slightly increasing in width and each approximately quadrate.

Pronotum 1.09 mm long, 1.26 mm wide; widest at anterior angles; anterior angles slightly produced to short teeth; sides evenly narrowed in smooth curve to posterior angles; slightly emarginate in front of posterior angles; posterior angles obtuse; lateral margin moderately fine; widened to posterior angles; in dorsal aspect visible throughout its total length; punctation weak and sparse; on average, interstices between punctures four to six times as wide as diameter of punctures; pair of punctures with long yellow setae close to anterior edge and at posterior third; anterior setiferous punctures closer to each other than posterior setiferous punctures; extremely weak netlike microsculpture; surface nearly polished and shiny.

Elytra 1.45 mm long, 1.35 mm wide; punctation weak and sparse; hardly visible in weak coriaceous ground-sculpture; surface moderately shiny.

Abdomen with dense setiferous punctation; punctures deeper and denser than on fore-body; netlike microsculpture weak, but more distinct than on pronotum; surface moderately shiny.

Protibia 0.57 mm long, 0.17 mm wide; with eight spines at outer edge; spines not inserted on teeth; comb at inner emargination totally visible in posterior aspect; posterior face with dense setation; anterior face with longitudinal row of setae.

Aedeagus weakly sclerotised; right side of apical lobe soft; apical lobe slightly curved; only one sensilla at inner edge of apical lobe.

Etymology. The specific name was selected to honour the collector, Martin Fikáček (NMPC).

Distribution. Known only from the type locality.

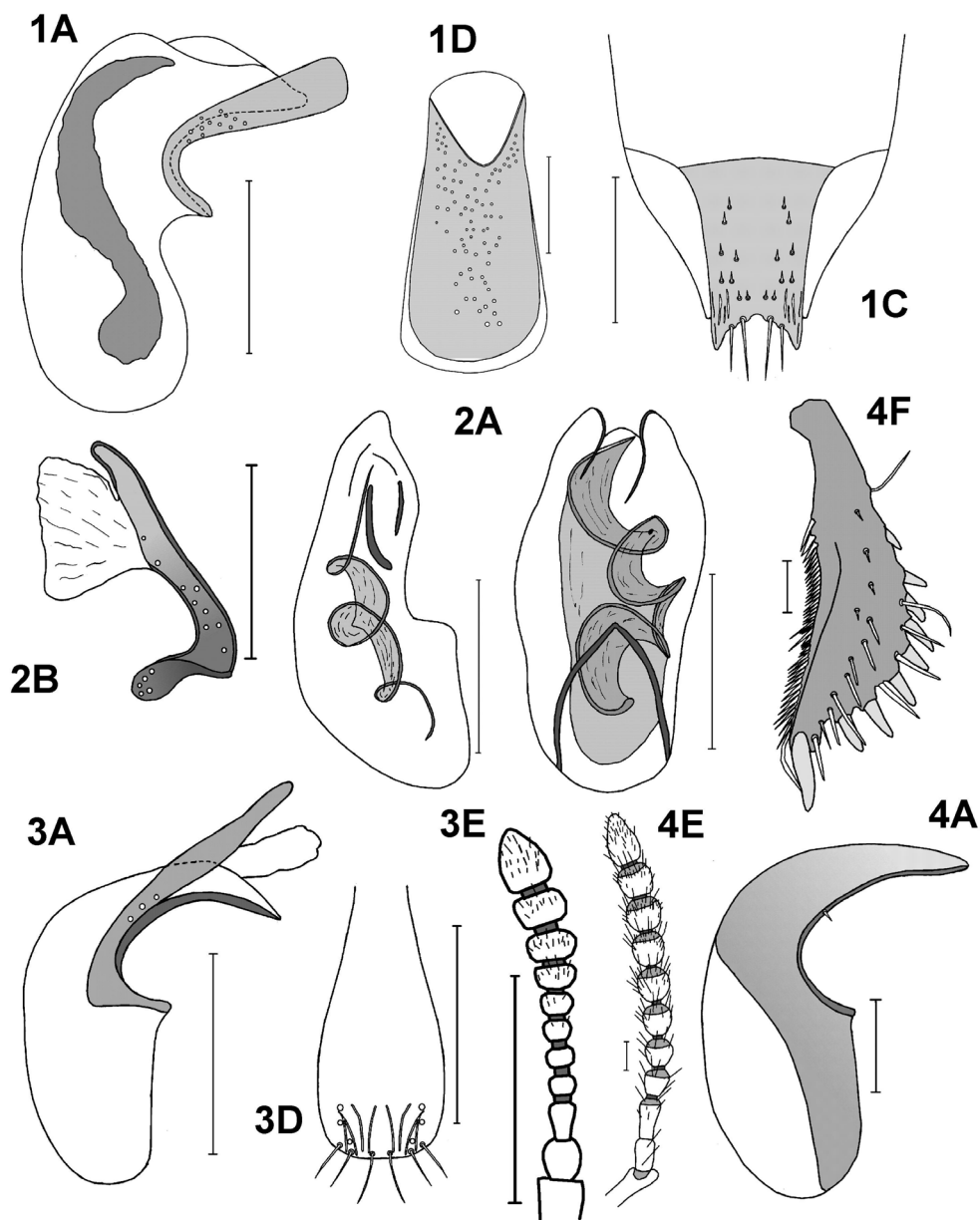
Thoracophorus cubensis sp.nov.

(Figs 3A,D,E, 5D)

Type locality. Cuba, Sierra del Rosario, El Mulo (83°20'W, 22°42'N), Cuba

Type material. HOLOTYPE: ♂ (IES): Prov. Pinar del Río, Sierra del Rosario, El Mulo (83°20'W, 22°42'N), southern slope, under bark, MSB, 200 m elevation, 16.x.2007, leg. A. Lozada. PARATYPES: 1 ♀ (IES): Sierra del Rosario, Prov. Pinar del Río, El Solón (83°20'W, 22°42'N), south. slope, bajo corteza, SSA, 400 m elevation, 13.x.2007, leg. A. Lozada; 1 ♀ (IES): El Mulo, southern slope, under bark, MSA, 400 m elevation, 16.x.2007, leg. A. Lozada; 2 spec. (IES, UIC): El Mulo, southern slope, under bark, MSB, 200 m elevation, 16.x.2007, leg. A. Lozada.

Diagnosis. The species can be placed in a group together with *T. simplex* Wendeler, 1930 and *T. venezuelanus* Irmiler, 2010 due to the indistinct bulges on the head and pronotum and the carinae on the elytra. Compared to these species, the bulges and the microsculpture are slightly more distinct. Thus, the surface is less shiny than in those two species. In this respect it also resembles *T. filum* Sharp, 1887, which may be distinguished by the more distinct microsculpture and distinctly matt surface.



Figs 1–4: Morphological details of Cuban Osoriinae. 1 – *Allotrochus cubensis* sp. nov.; 2 – *Nacaeus dejectus* (Sharp, 1887); 3 – *Thoracophorus cubensis* sp. nov.; 4 – *Antillosorius martini* sp. nov. Body parts: A – aedeagus in lateral/ventral aspect; B – paramere; C – last abdominal tergite; D – last abdominal sternite; E – antenna; F – protibia in posterior aspect. Scale bars: 0.1 mm.

Description. Length: 1.6 mm. Colouration: Light brown; posterior abdominal segments, legs and antennae still lighter brown to yellow.

Head 0.22 mm long, 0.28 mm wide; eyes large and prominent; distinctly visible in dorsal aspect; lateral margin fine; beginning at posterior edge of eyes and continuing to anterior edge of clypeus; vertex slightly depressed; within depression with pair of weak bulges; without punctation, netlike microsculpture moderately deep; surface slightly shiny.

Antennae clavate; slightly longer than head; first and second antennomeres distinctly thicker than five following antennomeres; second antennomere globular and 1.5 times as wide as conical third; following three antennomeres approximately quadrate and as wide as third; seventh antennomere slightly wider than sixth; ninth to eleventh antennomeres distinctly thicker than preceding antennomeres; nearly twice as wide as long.

Pronotum 0.24 mm long, 0.29 mm wide; widest in anterior half; sides in anterior half nearly parallel; in posterior half distinctly convergent; anterior angles widely rounded; posterior angles obtuse; pronotal disc with moderately deep central depression; in depression with central longitudinal bulge; lateral to central depression with sinuate furrow partly continuing to posterior margin; without punctation; microsculpture moderately deep; surface slightly shiny.

Elytra 0.32 mm long, 0.31 mm wide; shoulders widely rounded; two more or less distinct carinae on each side of suture; carinae not reaching posterior margin; without punctation; netlike microsculpture distinct; surface slightly shiny.

Abdomen with netlike microsculpture more distinct on segments III and IV than on posterior segments; surface of segments V to VIII shinier than on segments III and IV; posterior segments with sparse micro-punctation and short scale-like setae.

Aedeagus with long apical lobe; placed in rectangular angle to basal lobe; smoothly curved to acute apex; paramera long and slender, overtopping apical lobe; three sensillae on inner edge in basal half of paramera.

Etymology. The specific name derives from the country, where the species was found.

Distribution. Known from the Sierra del Rosario in the Pinar del Rio province of Cuba

Review of previously described Osoriinae from Cuba

Tribe Osoriini

Antillosorius buscki (Notman, 1925)

(Fig. 10D)

Osorius buscki Notman, 1925: 19.

Antillosorius buscki: IRMLER (2010).

Material examined. CUBA: GRANMA: 1 spec. (NMPC): La Platica, P.N. Turquino, slope below Pico Naranjo ca. 0.4 km N La Platica (by air) sifting of rather dry leaf litter and decaying wood in the secondary bushes with thin litter layer (76°53.03'W, 20°00.09'N), 950 m elevation, 24.vi.2012, leg. M. Fikáček; 3 spec. (NMPC, UIC): same location, trail to ca. 0.5 km S (by air) from La Platica, sifting of leaf litter and decaying wood in the secondary forest with many tree ferns and rich understory vegetation (76°53.03'W, 20°00.05'N), 920 m elevation, 27.vi.2012, leg. M. Fikáček.

Distribution. Cuba, Dominican Republic.

***Antillosorius crenulifrons* (Notman, 1925)**

(Fig. 9E)

Osorius crenulifrons Notman, 1925: 9.*Antillosorius crenulifrons*: IRMLER (2010).**Material examined.** CUBA: PINAR DEL RIO: 1 spec. (NMNH): San Diego de los Banos (83°21.58'W, 22°38.49'N), Feb. 1917, leg. Palmer.**Distribution.** Cuba, Bahamas.***Antillosorius cubensis* (Blackwelder, 1943)**

(Fig. 11A)

Osorius cubensis Blackwelder, 1943: 181.*Antillosorius cubensis*: IRMLER (2010).**Material examined.** CUBA: ARTEMISA: 1 ♀ (IES): Caimito, Sierra de Anafe (82°38.41'W 22°57.11'N), 28.v.1999, leg. L.M. Diaz & W. Suarez. GRANMA: 7 spec. (NMPC, UIC): La Platica, P.N. Turquino, La Mariposa, ca. 1 km SE La Platica (by air), sifting in old secondary evergreen forest with thick layer of leaf litter (76°52.09'W, 20°00.04'N), 1130 m elevation, 24.vi.2012, leg. Deler-Hernández; 1 spec. (NMPC): same location, slope below Pico Naranjo ca. 0.4 km N La Platica (by air), sifting of rather dry leaf litter and decaying wood in the secondary bushes with thin litter layer (76°53.03'W, 20°00.09'N), 950 m elevation, 24.vi.2012, leg. M. Fikáček.**Distribution.** Cuba.***Antillosorius darlingtoni* (Blackwelder, 1943)**

(Fig. 9F)

Osorius darlingtoni Blackwelder, 1943: 177.*Antillosorius darlingtoni*: IRMLER (2010).**Material identified by BLACKWELDER (1943).** CUBA: 14 spec. (USNM, MCZ): SANTIAGO DE CUBA: Pico Turquino (~76°49'W, 19°50'N), June 1936, leg. P.J. Darlington. GRANMA: Upper Ovando River (~74°17'W, 20°09'N), July 1936, leg. P.J. Darlington.**Distribution.** Cuba, Dominican Republic***Antillosorius manni* (Notman, 1925)**

(Fig. 10E)

Osorius manni Notman, 1925: 9.*Antillosorius manni*: IRMLER (2010).**Material examined.** CUBA: GUANTÁNAMO: 1 ♀ (NMPC): El Yunque, “La Cascada”, ca. 2.1 km SW of Campismo (74°34.0'W 20°19.09'N), 60 m elevation, 13.vi.2012, leg. Cala-Riquelme.**Distribution.** Cuba.***Antillosorius oriente* (Blackwelder, 1943)**

(Fig. 11B)

Osorius oriente Blackwelder, 1943: 187.*Antillosorius oriente* IRMLER (2010).**Material identified by BLACKWELDER (1943).** CUBA: GUANTÁNAMO: 3 spec. (USNM, MCZ): Imias (74°37'W, 20°04'N), mountains north of Imias, 3000–4000 ft elev., 25.–28.vii.1936, leg. Darlington.**Distribution.** Cuba, Puerto Rico.

***Antillosorius socors* (Darlington, 1937)**

(Fig. 10F)

Osorius socors Darlington, 1937: 294.*Antillosorius socors*: IRMLER (2010).

Material examined. CUBA: CIENFUEGOS: 1 spec. (MCZ): Soledad (80°16'W, 22°09'N), 15.vii.1933, leg. Weber; 1 spec. (IES): MAYABEQUE: Jaruco (82°00'34W, 23°02'34N), 14.vi.2002, leg. A. Rodríguez; PINAR DEL RIO: 1 spec. (IES): Sierra del Rosario, El Taburte, south. slope, under bark, TSB, 14.vi.2007, leg. A. Lozada & A. Hdez.

Distribution. Cuba.***Antillosorius strictus* (Blackwelder, 1943)**

(Fig. 10C)

Osorius strictus Blackwelder, 1943: 182.*Antillosorius strictus*: IRMLER (2010).

Material identified by BLACKWELDER (1943). CUBA: GUANTÁNAMO: 1 spec. (MCZ): Imias (74°37'W, 20°04'N), mountains north of Imias, 900 – 1200 m elevation, 25.–28.vii.1936, leg. Darlington.

Distribution. Cuba, Dominican Republic.***Antillosorius turquinus* (Blackwelder, 1943)**

(Fig. 10B)

Osorius turquinus Blackwelder, 1943: 188.*Antillosorius turquinus*: IRMLER (2010).

Material examined. CUBA: GRANMA: 2 spec. (MCZ, USNM): south side of Pico Turquino, 900–1500 m elevation, Jun. 1936.

Distribution. Cuba.***Holotrochus minor* Chevrolat & Fauvel, 1863**

(Fig. 8D)

Holotrochus minor Chevrolat & Fauvel, 1863: 437; IRMLER (1981a).

Material examined. CUBA: 1 spec. (IRSNB): without more data, leg. Poey.

Distribution. Cayman Islands, Costa Rica, Cuba, Ecuador, French Guyana, Grenada, Jamaica, Puerto Rico, San Salvador, Venezuela.

***Mimogonus fumator* (Fauvel, 1889)**

(Fig. 8C)

Osorius fumator Fauvel, 1889: 246.*Mimogonus fumator*: IRMLER (1981b).

Material examined. CUBA: HABANA: 1 spec. (NHMB): Havana, Lenin Park (82°22'W, 23°04'N), 14.xi.1981, leg. Orosí; GUANTÁNAMO: 1 spec. (NMPC): Jamaica (82°10.12'W, 22°58.44'N), 05.10.1928, leg. Rambousek; ARTEMISA: 4 spec. (NMPC, UIC): Caimito, 3.x.1928, leg. Leg. Rambousek.

Distribution. Pantropical: Dominican Republic, Guadeloupe, Haiti, Jamaica, Mexico, Panama, Puerto Rico.

***Osoriellus eggersi* (Bernhauer, 1904)**

(Fig. 8E)

Osorius eggersi Bernhauer, 1904: 19.*Osoriellus eggersi*: IRMLER (2014).

Material examined. CUBA: ARTEMISA: 2 ♀♀ (BMNH): Cayajabos (82°51'W, 22°51'N), Sierra del Rosario, 14.ii.1932, leg. A. Bierig. PINAR DEL RIO: 2 ♀♀, 2 ♂♂ (IES): Sierra del Rosario, El Mulo (83°20'W, 22°42'N), north slope, T. caída, MNA, 400 m elevation, 11.–15.x.2007, leg. A. Lozada & A. Hdez; 1 ♀ (IES): El Mulo, southern slope, under bark, MSB, 200 m elevation, 16.x.2007, leg. A. Lozada; 1 ♀ (IES): El Solón (83°20'W, 22°42'N), SSB, bajo corteza, southern slope, 200 m elevation, 24.i.2008, leg. A. Lozada.

Distribution. Dominican Republic, Cuba, Haiti, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, St. Thomas.

***Osoriellus exiguus* (Notman, 1925)**

(Fig. 8F)

Osorius exiguus Notman, 1925: 7.*Osoriellus exiguus*: IRMLER (2014).

Material examined. CUBA: PINAR DEL RIO: 1 spec. (IES): Sierra del Rosario, El Mulo (83°20'W, 22°42'N), northern slope, T. caída, MNB, 400 m elevation, 11.–15.x.2007, leg. A. Lozada & A. Hdez. GRANMA: 10 spec. (NMPC): La Platica, P.N. Turquino, trail to ca. 0.5 km S (by air) from La Platica, sifting of leaf litter and decaying wood in the secondary forest with many tree ferns and rich understory vegetation (76°53.03'W, 20°00.05'N), 27.vi.2012, M. Fikáček; 8 spec. (NMPC): same location, saddle below La Mariposa, ca. a. 0.8 km SE La Platica (by air), sifting of leaf litter and decaying wood in the low secondary evergreen forest with rather rich understory (76°52.09'W, 20°00.05'N), 24.vi.2012, leg. M. Fikáček; 1 spec. (NMPC): same location, slope below Pico Naranjo ca. 0.4 km N La Platica (by air), sifting of rather dry leaf litter and decaying wood in the secondary bushes with thin litter layer (76°53.03'W, 20°00.09'N), 24.vi.2012, leg. M. Fikáček.

Distribution. Cuba, Belize, Costa Rica.

***Osoriellus haitiellus* (Darlington, 1937)**

(Fig. 9D)

Osorius haitiellus Darlington, 1937: 300; BLACKWELDER (1943).*Osoriellus haitiellus*: IRMLER (2014).

Material identified by BLACKWELDER (1943). CUBA: GUANTÁNAMO: (USNM, MCZ): Imias (74°37'W, 20°04'N), mountains north of Imias, leg Darlington.

Distribution. Cuba, Haiti, Dominican Republic.

***Osoriellus lewisi* (Blackwelder, 1943)**

(Fig. 9A)

Osorius lewisi Blackwelder, 1943: 197.*Osoriellus lewisi*: IRMLER (2014).

Material examined. CUBA: ARTEMISA: 1 spec. (AMNH): Cayamas (80°34'W, 22°16'N), leg. E. A. Schwarz. GUANTÁNAMO: 2 spec. (NMPC, UIC): El Yunque, ca. 2 km W of campismo popular (20°12'N, 74°34'W), ca. 350 m elevation, 11.vi.2012, leg. Cala-Riqueme, Deler-Hernández & M. Fikáček; 1 ♀ (NMPC): Santa Maria, PN Humboldt, ca. 1.5–3 km SW of Santa Maria (74°42.04'W, 20°30.06'N), “Nuevo Mundo”, sifting slightly wet old accumulation of flood debris on side of road, riverine evergreen rainforest, near St. Maria River, 17.vi.2012, leg.

Deler-Hernández & M. Fikáček. **GRANMA**: 1 ♂ (NMPC): La Platica (76°53'W, 20°00'N), P.N. Turquino, La Mariposa, ca. 1 km SE La Platica (by air), sifting in old secondary evergreen forest with thick layer of leaf litter, 24.vi.2012, leg. Deler-Hernández & M. Fikáček.

Distribution. Cuba, Cayman Islands.

***Osoriellus obtusicollis* Irmeler, 2014**

(Fig. 9B)

Osoriellus obtusicollis Irmeler, 2014: 280.

Material examined. CUBA: HABANA: 1 ♀ (IES): Cotorto (82°13'W, 23°01'N), luz, 9. 1998, leg. A. Lozada.

Distribution. Belize, Cuba.

***Osoriellus schwarzi* (Notman, 1925)**

(Fig. 9C)

Osorius schwarzi Notman, 1925: 7; BLACKWELDER (1943).

Osoriellus schwarzi: IRMLER (2014).

Material examined. CUBA: ARTEMISA: 1 spec. (USNM): Cayamas (80°34'W, 22°16'N), 20.v.1919, leg. E. A. Schwarz.

Distribution. Costa Rica, Cuba, Honduras, Mexico, Nicaragua, Panama.

Tribe: Thoracophorini

***Clavilispinus exiguus* (Erichson, 1840)**

(Fig. 7A)

Lispinus exiguus Erichson, 1840: 830.

Paralispinus exiguus: BLACKWELDER (1943).

Clavilispinus exiguus: IRMLER (1991); IRMLER (2003b).

For complete synonymy see IRMLER (2003b).

Material examined. CUBA: ARTEMISA: 1 spec. (NMNH): Cayamas (82°29'W, 22°35'N), leg. E. A. Schwarz. HABANA: 1 spec. (BMNH): Caimito (82°35'W, 22°57'N), leg. Rambousek; 1 spec. (NHMB): Havana (82°22'W, 23°04'N), 15.iii.1974, leg. Z. Mészáros.

Distribution. Pantropical. Neotropical records: Belize, Bolivia, Columbia, Costa Rica, Cuba, Dominican Republic, Ecuador, French Guyana, Grenada, Guadeloupe, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Suriname, St. Croix, St. Lucia, Venezuela.

***Clavilispinus megacephalus* (Fauvel, 1865)**

(Fig. 7B)

Ancaeus megacephalus Fauvel, 1865: 61.

=*Paralispinus crepusculus* Blackwelder, 1943: 160.

Clavilispinus megacephalus: IRMLER (1991).

Material examined. CUBA: ARTEMISA: 1 spec. (NMNH): Cayamas (82°29'W, 22°35'N), under bark, 28.ii.1937, leg. E. A. Schwarz.

Distribution. Belize, Bolivia, Brazil, Costa Rica, Cuba, Columbia, Ecuador, French Guyana, Guadeloupe, Guyana, Jamaica, Mexico, Peru, Puerto Rico, Suriname, St. Lucia, Trinidad.

***Clavilispinus minutus* (Sharp, 1887)**

(Fig. 7D)

Ancaeus minutus Sharp, 1887: 717.*Clavilispinus minutus*: IRMLER (1991); IRMLER (2003b).**Material examined.** CUBA: PINAR DEL RIO: 1 spec. (NMPC): Sierra Maestra (83°13'W, 22°13'N), 15.x.1928, leg. Rambousek.**Distribution.** Belize, Brazil, Bolivia, Costa Rica, Cuba, Guyana, Nicaragua, Peru, USA, Venezuela.***Clavilispinus politus* (Sharp, 1887)**

(Fig. 7C)

Ancaeus politus Sharp, 1887: 718.=*Paralispinus rulomus* Blackwelder, 1943: 160.*Clavilispinus politus*: IRMLER (1991); IRMLER (2003b).**Material examined.** CUBA: GRANMA: 1 spec. (FNMH): Yara (76°57'W, 20°16'N) without further data.**Distribution.** Belize, Brazil, Columbia, Costa Rica, Cuba, Ecuador, Guadeloupe, Guatemala, Guyana, Jamaica, Mexico, Nicaragua, Panama Peru, St. Lucia, St. Vincent, Suriname, USA, Venezuela.***Espeson moratus* Schaufuss, 1882**

(Fig. 5E)

Espeson moratus Schaufuss, 1882: 45; BLACKWELDER (1943); IRMLER (2012).**Material examined.** CUBA: HABANA: 1 ♂ (AMNH): Sierra Bouilla, 18.11.1928, leg. A. Bierig. VILLA CLARA: 1 ♀ (AMNH): Soledad (80°16'W, 22°09'N), 1.8.1932, leg. B. B. Leavitt.**Distribution.** Brazil, Cuba, Ecuador, Grenada, Paraguay, Puerto Rico, St. Thomas, St. Vincent, Trinidad.***Lispinus cubensis* Irmeler, 1994**

(Fig. 7E)

Lispinus cubensis Irmeler, 1994: 63.**Material examined.** CUBA: PINAR DEL RIO: 1 ♂, 1 ♀ (IES): Sierra del Rosario, El Solón (83°20'W, 22°42'N), SNA, bajo corteza, 400 m elevation, 12.x.2007, leg. A. Lozada; 1 ♀ (IES): Loma del Rubi (82°54'28"W, 22°53'45"N), 80 m elevation, 6.x.1998, leg. A. Lozada; 1 spec. (IES): El Taburete, south. slope, under bark, 400 m elevation, TSA, 18.x.2007, leg. A. Lozada (IES); 1 spec. (BMNH): Rangel, without date, leg. A. Bierig; 2 ♂♂ (FMNH): Sierra Rangel (83°31'W, 22°36'N), xii.1934, leg. A. Bierig (FMNH).**Distribution.** Endemic to Cuba.***Lispinus insularis* Chevrolat & Fauvel, 1863**

(Fig. 8B)

Lispinus insularis Chevrolat & Fauvel, 1863: 442; IRMLER (2000).**Material examined.** CUBA: PINAR DEL RIO: 2 spec. (NMPC): Sierra Maestra, 15.x.1928, leg. F. Rambousek. HABANA: 2 spec. (NMPC): Marianao, bamboo, 12.x.1928, leg. A. Bierig. ARTEMISA: 2 spec. (NMPC): Caimito, 20./21. i.1928, A. Bierig. **Without more data:** 1 spec. (IRSNB)**Distribution.** Cuba, Dominica, Dominican Republic, Guadeloupe, Puerto Rico.

***Lispinus laticollis* Erichson, 1840**

(Fig. 7F)

Lispinus laticollis Erichson, 1840: 828; IRMLER (1994: 58); IRMLER (2006:3); IRMLER (2009: 10).

Material examined. **CUBA:** MATANZAS: 3 spec. (IRSNB): Cardenas (81°12'W, 23°02'N). GUANTÁNAMO: 3 spec. (AMNH): San Carlos Est. (75°08'W, 20°08'N), 8.x.1913. CIENFUEGOS: 1 spec. (IES): Mayari (83°00'W, 22°63'N), Rio Piloto, 15 m elevation, male, 3.ii.1998, leg. A. Lozada, P. Valdos. GRANMA: 3 spec. (NMPC): Sierra Maestra, 15.x.1928, leg. F. Rambousek. **Without more data:** 1 spec. (ZHM) leg. S.H. Richter.

Distribution. Brazil, Colombia, Costa Rica, Cuba, Nicaragua, Honduras, Panama, Peru, Venezuela.

***Lispinus striola* Erichson, 1840**

(Fig. 8A)

Lispinus striola Erichson, 1840: 828; IRMLER (2009: 14); IRMLER (2012: 223).

Material examined. **CUBA:** PINAR DEL RIO: 3 spec. (IES): Sierra del Rosario, El Mulo (83°20'W, 22°42'N), south slope, under bark, 400 m elevation, 16.x.2007, leg. A. Lozada.; 2 spec. (NMPC): Sierra Maestra, 15.x.1928, leg. F. Rambousek. HABANA: 4 spec. (NMPC): Caimito, 21.x.1928, leg. A. Bierig. GUNTÁNAMO: 3 spec. (NMPC): Jamaica 05.x.1928, leg. F. Rambousek. **Without more data:** 1 spec. (ZMH): leg. S.H. Richter.

Distribution. Belize, Bolivia, Brazil, Columbia, Costa Rica, Cuba, Ecuador, French Guyana, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, San Salvador, Suriname, Trinidad, Venezuela.

***Nacaeus dejectus* (Sharp, 1887)**

(Figs 2A–B, 6A)

Lispinus dejectus Sharp, 1887: 721.*Nacaeus dejectus*: IRMLER (2003a: 102); IRMLER (2006: 212).

Material examined. **CUBA:** PINAR DEL RIO: 1 spec. (FMNH): Pinar del Rio (83°41'W, 22°24'N), 4.viii.1929, leg. A. Bierig; Aspiro (83°41'W, 22°25'N), 41 spec. (FMNH): 3.vi.1934, 7 spec. (FMNH): 1.1.1933, 1 spec. (FMNH): 27.x.1938, leg. A. Bierig; 1 spec. (FMNH): Rangel (80°50'W, 22°25'N), Dec. 1932, leg. A. Bierig. HABANA: 5 spec. (ZMH): Havana (82°22'W, 23°04'N), leg. Baker; 1 spec. (FMNH): Sierra Bonilla, Sitio Perdido, Sierra Tapaste (82°1361'W, 23°0242 N), leg. A. Bierig; 10 spec. (FMNH): Sierra Bonilla, 27.i.1927, leg. Bierig; 4 spec (FMNH): Cueva del Indio, 20?.x?.1932, leg. A. Bierig; 10 spec. (FMNH): Somorostro (82°11'W, 22°59'N), quarry in Sra. de Tapaste, 14.viii.1932, leg. A. Bierig; 14 spec. (FMNH): Sitio Perdido, Jaruco (82°00'W, 23°02'N), 4.iv.1932; leg. A. Bierig; 1 spec. (FMNH): Amiro, 16.vii.1934, leg. A. Bierig; 11 spec. (NMPC, UIC): Caimito (82°37'W, 22°98'N), 20.i.1929, 1 spec. (NMPC): 16.vii.1934, leg. A. Bierig. **Without more data:** 1 spec. (IRSNB)

Distribution. Costa Rica, Cuba, Guatemala, Mexico, Panama.

***Nacaeus flavipennis* (Fauvel, 1865)**

(Fig. 6E)

Lispinus flavipennis Fauvel, 1865: 58.*Nacaeus flavipennis*: IRMLER (2003a: 102); IRMLER (2006: 212).

Material examined. **CUBA:** PINAR DEL RIO: 1 spec. (FMNH): 04.viii.1929, leg. A. Bierig. GUANTÁNAMO: 1 spec. (NMPC): Jamaica, 05.x.1928, leg. F. Rambousek.

Distribution. Brazil, Columbia, Cuba, Costa Rica, French Guyana, Guadeloupe, Mexico, Panama, Peru, Venezuela.

***Nacaeus impressicollis* (Motschulsky, 1857)**

(Fig. 6B)

Lispinus impressicollis Motschulsky, 1857: 495.=*Pseudolispinodes irregularis* Blackwelder, 1943: 124.=*Pseudolispinodes danforthi* Blackwelder, 1943: 127.*Nacaeus impressicollis*: IRMLER (2003a).

Material examined. CUBA: HABANA: 1 spec. (FMNH): Cojimar, 07.x.1928, leg. F. Rambousek; 1 spec. (MCZ): Soledad, iv.1936, leg. J. Darlington; 1 spec. (HNHM): Quivicán, 10.xi.1974, leg. Z. Mészáros; 7 spec. (NMPC): Caimito, 21.x.1928, 20.i.1929, leg. A. Bierig; 5 spec. (NMPC): 03.x.1928, leg. F. Rambousek; 13 spec. (NMPC): Managua, 05.i.1929, leg. A. Bierig, 2 spec. (NMPC): Marianao, bamboo, 12.x.1928, leg. A. Bierig; 1 spec. (NHMB): Quevedo, 10.xi.1974, leg. Z. Mészáros; 1 spec. (ZMH): leg. Baker. ARTEMISA: 1 spec. (USNM): Cayamas, 28.ii.1937, leg. R. Blackwelder (described as *Lispinus irregularis*). GUANTÁNAMO: 3 spec. (NMPC): Jamaica, 05.x.1928, leg. F. Rambousek.

Distribution. Pantropical. In the Neotropics recorded from Argentina, Brazil, Cuba, French Guyana, Guadeloupe, Haiti, Jamaica, Panama, Puerto Rico, Mexico.

***Nacaeus laetus* (Sharp, 1876)**

(Fig. 6C)

Lispinus laetus Sharp, 1876: 417.*Nacaeus laetus*: IRMLER (2003a).

Material examined. CUBA: PINAR DEL RIO: 1 spec. (FMNH): without further data, leg. A. Bierig

Distribution. Brazil, Bolivia, Costa Rica, Cuba, Ecuador, French Guyana, Panama, Peru, Venezuela.

***Nacaeus nigrifrons* (Chevrolat & Fauvel, 1863)**

(Fig. 6D)

Lispinus nigrifrons Chevrolat & Fauvel, 1863: 443.=*Lispinus sparsepunctatus* Cameron, 1913: 321.*Nacaeus nigrifrons* IRMLER (2003a).

Material examined. CUBA: PINAR DEL RIO: 1 spec. (FMNH): 04.viii.1929, leg. A. Bierig; 3 spec. (RYC, UIC): Parque Nacional La Guira, 19.i.1986, leg. A.A. Zakharov. **Without more data:** 1 spec. (ZMH): leg. S.H. Richter; 1 spec. (IRNSB): leg. Poey.

Distribution. Cuba, Montserrat, Guadeloupe, Grenada, St. Vincent.

***Nacaeus planellus* (Sharp, 1887)**

(Fig. 5F)

Lispinus planellus Sharp, 1887: 722.*Nacaeus planellus*: IRMLER (2003a).

Material examined. CUBA: PINAR DEL RIO: 1 spec. (IES): Sierra del Rosario, El Solón (83°20'W 22°42'N), SNA, bajo corteza, northern slope, 400 m elevation, 12.x.2007, leg. A. Lozada; 1 spec. (IES): El Taburete (83°20'W, 22°42'N), north. slope, under bark, 200 m elevation, 17.x.2007, leg. A. Lozada; 1 spec. (IES): El Taburete, southern. slope, under bark, TSB, 200 m elevation, 18.x.2007, leg. A. Lozada; 1 spec. (IES): El Mulo (83°20'W, 22°42'N), southern. slope, T. caída, MSB, 200 m elevation, 27.iv.–1.v.2008, leg. A. Lozada & A. Hdez.

Distribution. Pantropical: Brazil, Bolivia, Columbia, Costa Rica, Ecuador, French Guyana, Guadeloupe, Guyana, Honduras, Panama, Peru, Mexico, Nicaragua, Suriname, Venezuela.

***Tannea picata* Irmeler, 2003**

(Fig. 6F)

Tannea picata Irmeler, 2003: 94; IRMLER (2007).**Material examined.** CUBA: MAYABEQUE: 1 spec. (FMNH): Somorrostro (82°11'W, 23°00'N), 14.viii.1932, leg. Bierig.**Distribution.** Belize, Columbia, Costa Rica, Cuba, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Venezuela.***Thoracophorus guadalupensis* Cameron, 1913**

(Fig. 5C)

Thoracophorus guadalupensis Cameron, 1913: 323; IRMLER (1985).**Material examined.** CUBA: PINAR DEL RIO: 2 spec. (IES): Sierra del Rosario, El Solón (83°20'W, 22°42'N), SNA, bajo corteza, 12.x.2007, leg. A. Lozada; 1 spec. (IES): El Taburete (83°20'W, 22°42'N), south. slope, under bark, 200 m elevation, TSB, 18.x.2007, leg. A. Lozada; 1 spec. (RYC): Parque Nacional La Guira, 17.iii.1986, leg. A.A. Zakharov. ARTEMISA: 1 spec. (USNM): Cayamas, leg. E.A. Schwarz.**Distribution.** Argentina, Belize, Bolivia, Brazil, Columbia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Suriname, St. Lucia, St. Thomas, St. Vincent, Trinidad, Venezuela.***Thoracophorus brevicristatus* Horn, 1871**

(Fig. 5B)

Thoracophorus brevicristatus Horn, 1871: 332; IRMLER (1985).**Material examined.** CUBA: PINAR DEL RIO: 1 spec. (IES): Sierra del Rosario, El Taburete (83°20'W, 22°42'N), south. slope, under bark, 200 m elevation, TSB, 18.x.2007, leg. A. Lozada.**Distribution.** Bahamas, Costa Rica, Cuba, Guadeloupe, Martinique, Mexico, Nicaragua, Panama, St. Croix, St. Lucia, USA.**Key to genera and species of the Cuban Osoriinae**

- 1 Inner edge of protibia emarginate. Tribe Osoriini. 22
- Inner edge of protibia even, without emargination. Tribe Thoracophorini. 2
- 2 Elytra with three to four longitudinal carinae or remnants of carinae. Genus *Thoracophorus* Motschulsky, 1837. 3
- Elytra without longitudinal carinae. 5
- 3 Eyes totally visible in dorsal aspect, elytra with remnants of carinae, lateral margin of pronotum even (Fig. 5D), aedeagus (Fig. 3A). ***Thoracophorus cubensis* sp. nov.**
- Eyes at least partly covered by supraocular carinae, lateral margin of pronotum denticulate. 4
- 4 Eyes totally covered by supraocular carinae (Fig. 5B), aedeagus (IRMLER 1985: Fig. 7c). ***Thoracophorus brevicristatus* Horn, 1871**

- Eyes only partly covered by supraocular carinae (Fig. 5C), aedeagus (IRMLER 1985: Fig. 23c). *Thoracophorus guadalupensis* Cameron, 1913
- 5 Minute species of 1.4 to 1.6 mm, sides of pronotum deeply emarginate in front of posterior angles, (Fig. 5E), aedeagus (IRMLER 2012: Figs 9c,d).
..... *Espeson moratus* Schaufuss, 1882
- Longer than 2.0 mm, sides of pronotum with less deep emargination in front of posterior angles. 6
- 6 Abdominal sternites with diagonal striae. Genus *Lispinus* Erichson, 1840. 7
- Abdominal sternites without diagonal striae 10
- 7 Sides of pronotum divergent to posterior angles, second antennomere elongate, nearly three times longer than the third (Fig. 7F), aedeagus (IRMLER 1994: Fig. 7c).
..... *Lispinus laticollis* Erichson, 1840
- Sides of pronotum nearly parallel or convergent to posterior angles, second antennomere not three times longer than the third. 8
- 8 Elytra and antennomeres 4 and 5 longer than wide (Fig. 7E), aedeagus (IRMLER 1994: Fig. 1c). *Lispinus cubensis* Irmeler, 1994
- Elytra and antennomeres 4 and 5 quadrate or wider than long. 9
- 9 Sides of pronotum nearly parallel, elytra with longitudinal furrow, 4.8–5.0 mm long (Fig. 8A), aedeagus (IRMLER 2012a: Fig. 3k). *Lispinus striola* Erichson, 1840
- Sides of pronotum distinctly narrowed to posterior angles, elytra without longitudinal furrows, smaller than 4.0 mm (Fig. 8B), aedeagus (IRMLER 2000: Figs 5e,f).
..... *Lispinus insularis* Chevrolat & Fauvel, 1863
- 10 Elytra distinctly wider than long (Fig. 5A), aedeagus (Fig. 1A).
..... *Allotrochus cubensis* sp. nov.
- Elytra only slightly wider than long, quadrate or longer than wide. 11
- 11 Male antennae considerably longer than head, eyes distinctly prominent, semicircular (Fig. 6F). *Tannea picata* Irmeler, 2003
- Length of male and female antennae equal, eyes not semicircular. 12
- 12 Antennae only slightly longer than head, gular sutures combined throughout their total length; parthenogenetic species. Genus *Clavilispinus* Bernhauer, 1926. 13
- Antennae only slightly shorter than head and pronotum combined, gular sutures at least partly divided. Genus *Nacaesus* Blackwelder, 1942. 16
- 13 Surface of pronotum and elytra without microsculpture, polished and shiny (Fig. 7C). ..
..... *Clavilispinus politus* (Sharp, 1887)
- Surface of pronotum and elytra with dense microsculpture, matt. 14
- 14 Colouration yellow, smaller than 2.8 mm. 15
- Colouration dark and between 2.8 and 3.0 mm long (Fig. 7B).
..... *Clavilispinus megacephalus* (Fauvel, 1865)
- 15 Smaller species of 1.9 to 2.1 mm length (Fig. 7A).
..... *Clavilispinus exiguus* (Erichson, 1840)
- Larger species of 2.4 to 2.5 mm length (Fig. 7D). .. *Clavilispinus minutus* (Sharp, 1887)
- 16 Extremely depressed, yellow, eyes small, much shorter than temples (Fig. 5F), aedeagus (IRMLER 2003a: Fig. 26e). *Nacaesus planellus* (Sharp, 1887)

- Only slightly depressed; dark brown or only pronotum and elytra yellow; eyes larger and longer than temples. 17
- 17 Elytra and/or pronotum yellow, smaller species of approximately 2 mm length. 18
- Brown or black; at least 2.5 mm long. 20
- 18 Pronotum and elytra light brown to yellow, head dark or light brown. 19
- Only elytra light yellow, head and pronotum brown (Fig. 6E), aedeagus (IRMLER 2003a: Figs 44e,f). *Nacaeus flavipennis* (Fauvel, 1865)
- 19 Microsculpture of elytra isodiametric, head dark brown (Fig. 6D), aedeagus (IRMLER 2003a: Figs 40e,g). *Nacaeus nigrifrons* (Chevrolat & Fauvel, 1863)
- Microsculpture of elytra longitudinal, head light brown (Fig. 6C), aedeagus (IRMLER 2003: Figs 42e,g). *Nacaeus laetus* (Sharp, 1876)
- 20 Punctures on elytra sparse and fine; hardly visible in isodiametric microsculpture, smaller, between 2.5 mm and 3 mm long, punctation of pronotum fine and sparse, elytra longer than wide (Fig. 6A), aedeagus (Fig. 2A). *Nacaeus dejectus* (Sharp, 1887)
- Punctures on elytra distinctly visible, microsculpture irregular, netlike and partly longitudinal, elytra approximately quadrate (Fig. 6B), aedeagus (IRMLER 2003a: Fig. 30e) *N. impressicollis* (Motschulsky, 1857)
- 21 Outer edge of protibia with spines, antennae geniculate 23
- Outer edge of protibia with setae, antennae not geniculate. 22
- 22 Sides of pronotum evenly curved; widest in the middle and without emargination in front of posterior angles (Fig. 8D), aedeagus (IRMLER 1981a: plate 7 Fig. 1b). *Holotrochus minor* Chevrolat & Fauvel, 1863
- Sides of pronotum deeply emarginate in front of posterior angles (Fig. 8C), aedeagus (IRMLER 1981b: Fig. 1d). *Mimogonus fumator* Fauvel, 1889
- 23 Body with only few setae, sides of pronotum at least slightly emarginate in front of posterior angles, lateral margin of pronotum widened from anterior to posterior angles; third antennomere nearly twice as long as second. Genus *Antillosorius* Irmeler, 2010. 29
- Body with setiferous punctation, sides of pronotum not sinuate in front of posterior angles. Genus *Osoriellus* Fagel, 1958. 24
- 24 Smaller than 2.9 mm, head brown, pronotum, elytra and abdomen light yellow (Fig. 8F), aedeagus (IRMLER 2014: Fig. 43C) *Osoriellus exiguus* (Notman, 1925)
- Larger, at least 3.0 mm. 25
- 25 Pronotum with isodiametric microsculpture, surface matt (Fig. 9A), aedeagus (IRMLER 2014: Fig. 48C). *Osoriellus lewisi* (Blackwelder, 1943)
- Pronotum without or with weak microsculpture, surface shiny. 26
- 26 Pronotum with large punctures placed in irregular longitudinal rows and with wide impunctate midline. 27
- Pronotum with fine and dense punctation and narrow impunctate midline (Fig. 8E), aedeagus (IRMLER 2014: Fig. 62C). *Osoriellus eggersi* (Bernhauer, 1904)
- 27 Small species of 3.5 to 3.9 mm length (Fig. 9B), aedeagus (IRMLER 2014: Fig. 65C). *Osoriellus obtusicollis* Irmeler, 2014
- Species longer than 4.0 mm. 28

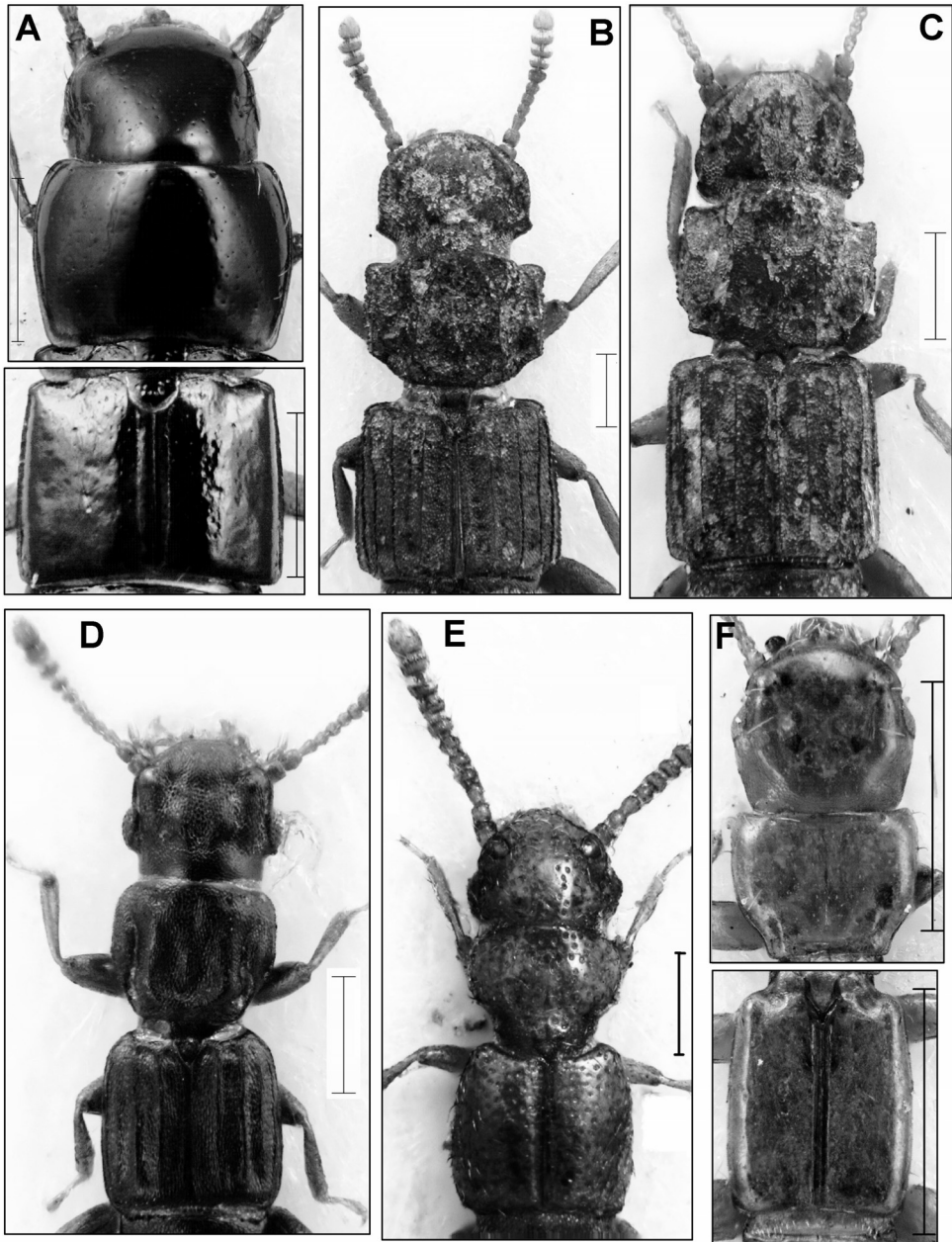


Fig. 5. Head, pronotum and elytra, showing shape, punctation and microsculpture. A – *Allotrochus cubensis* sp. nov.; B – *Thoracophorus brevicristatus* Horn, 1871; C – *T. guadalupensis* Cameron, 1913; D – *T. cubensis* sp. nov.; E – *Espeson moratus* Schaufuss, 1882; F – *Nacaeus planellus* (Sharp, 1887). Scale bars: 0.2 mm (A–E), 0.5 mm (F).

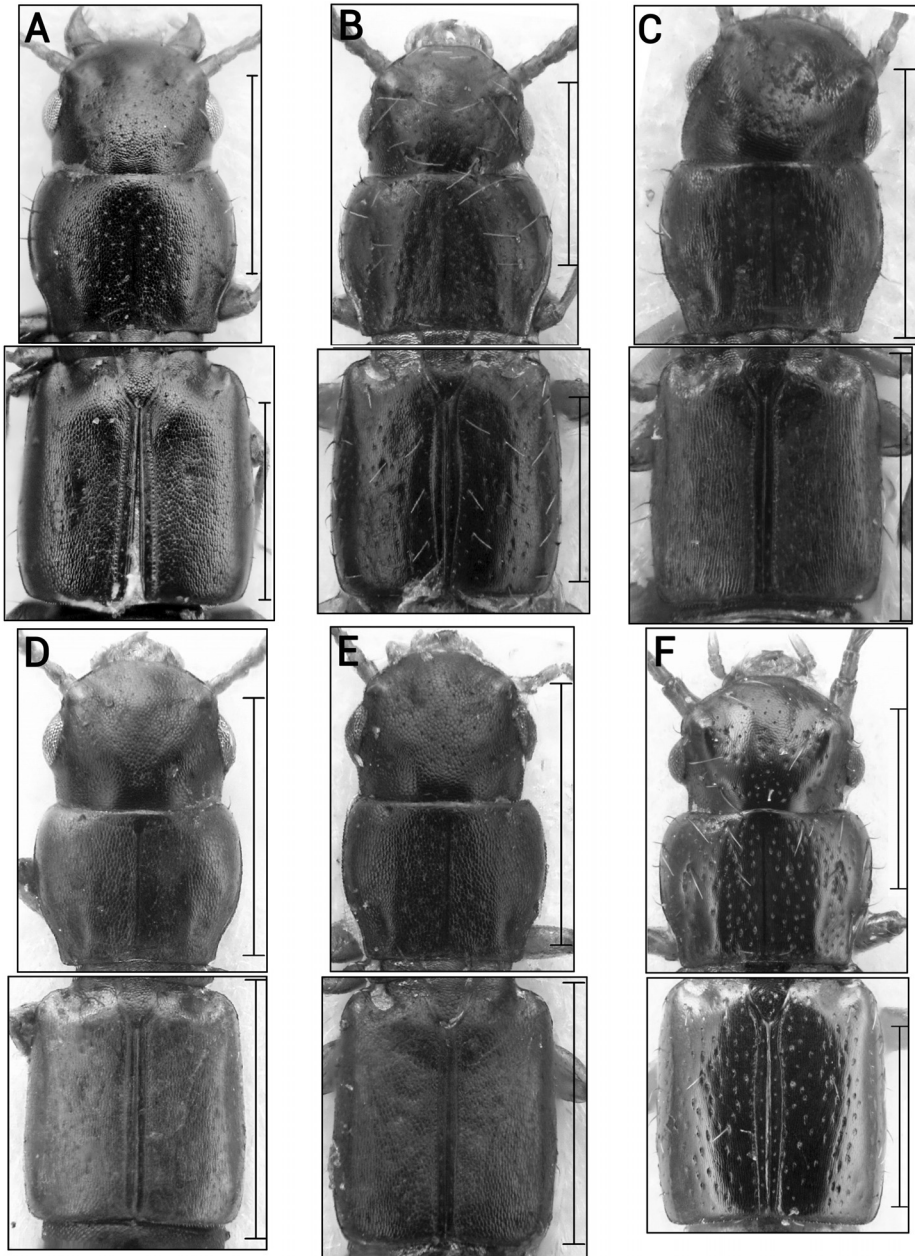


Fig. 6. Head, pronotum and elytra, showing shape, punctation and microsculpture. A – *Nacaeus dejectus* (Sharp, 1887); B – *N. impressicollis* (Motschulsky, 1857); C – *N. laetus* (Sharp, 1876); D – *N. nigrifrons* Chevrolat & Fauvel, 1863; E – *N. flavipennis* (Fauvel, 1865); F – *Tannea picata* Irmeler, 2003. Scale bars: 0.2 mm (A–E), 0.5 mm (F).

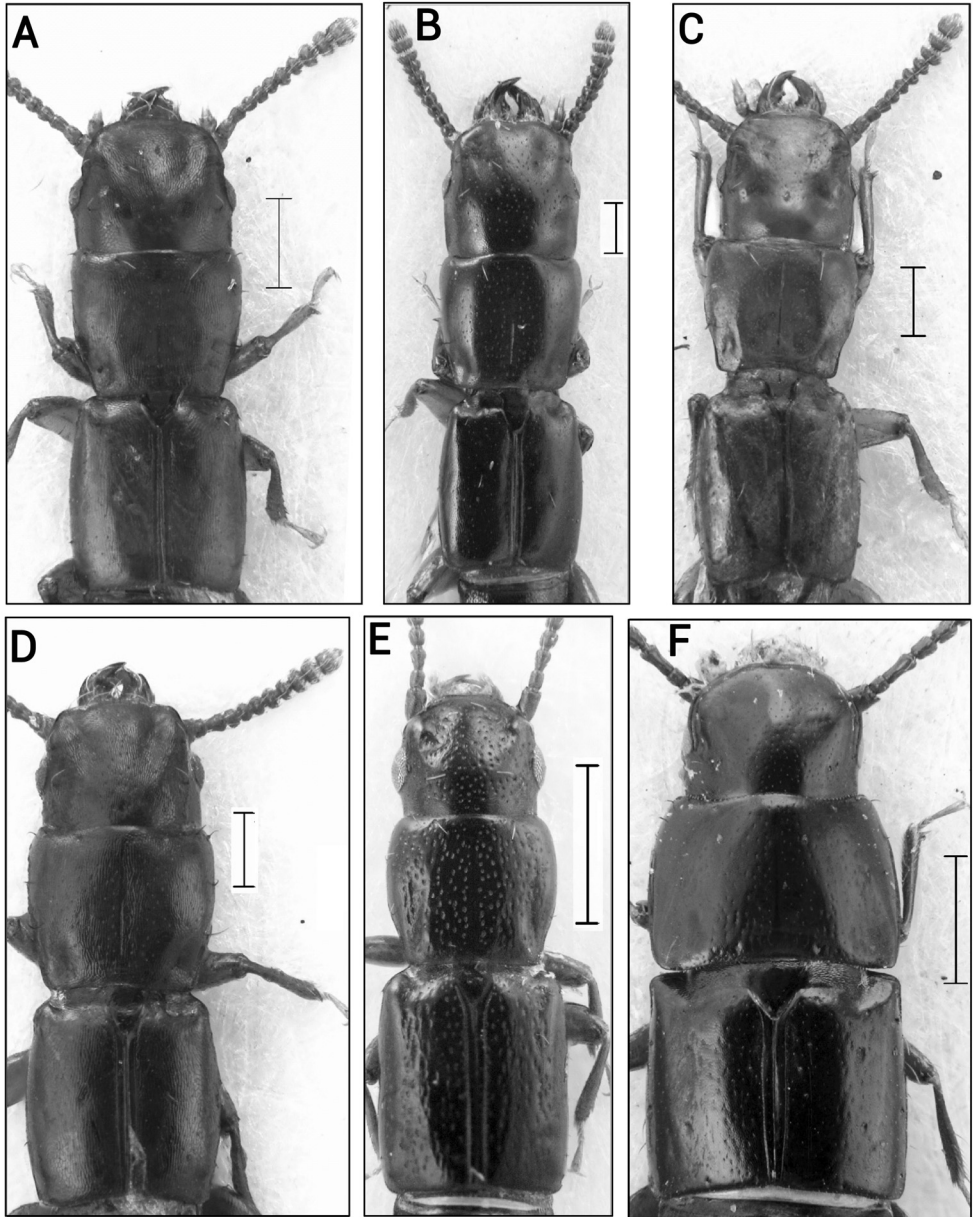


Fig. 7. Head, pronotum and elytra, showing shape, punctuation and microsculpture. A – *Clavispinus exiguus* (Erichson, 1840); B – *C. megacephalus* (Fauvel, 1865); C – *C. politus* (Sharp, 1887); D – *C. minutus* (Sharp, 1887); E – *Lispinus cubensis* Irmeler, 1994; F – *L. laticollis* Erichson, 1840. Scale bars: 0.2 mm (A–D), 0.5 mm (E–F).

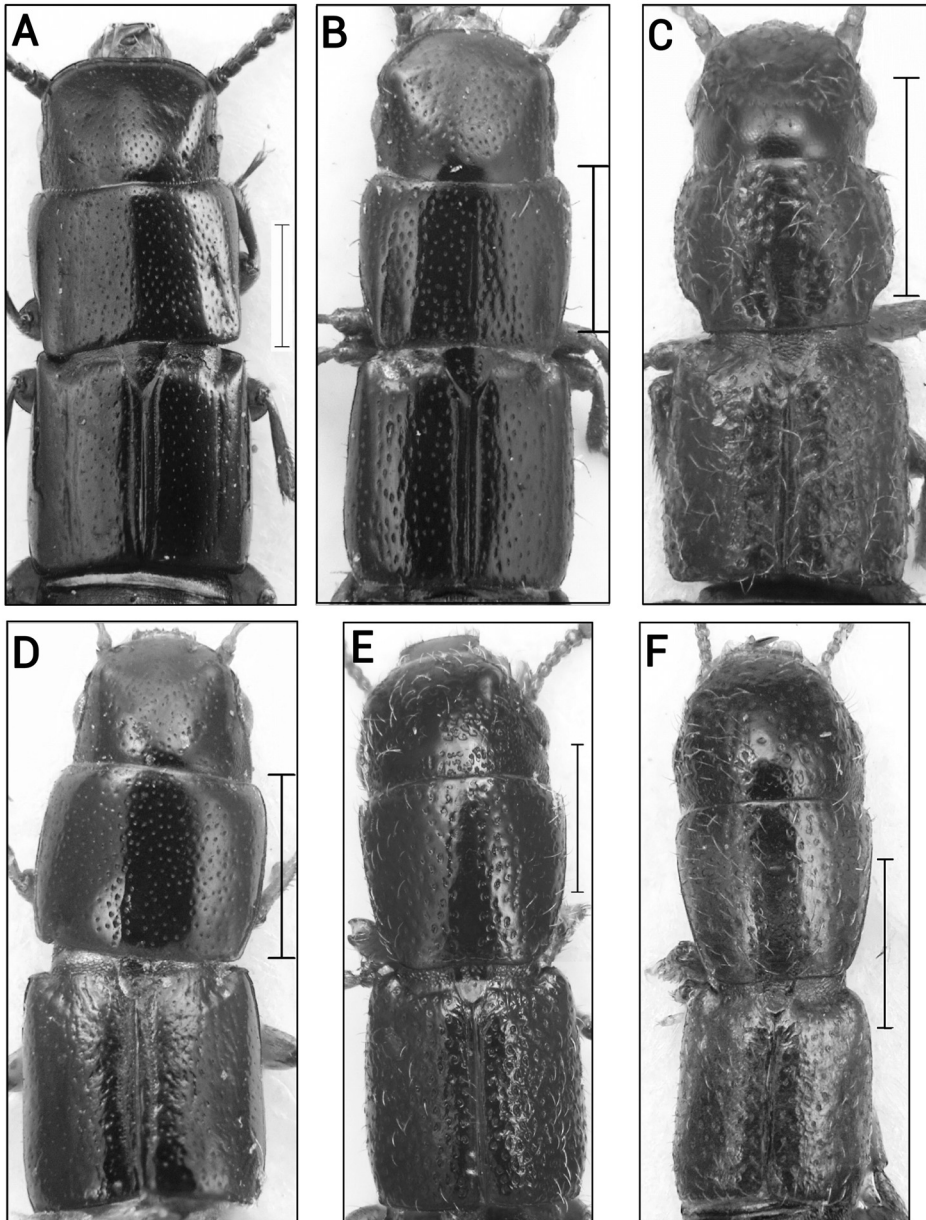


Fig. 8. Head, pronotum and elytra, showing shape, punctation and microsculpture. A – *Lispinus striola* Erichson, 1840; B – *L. insularis* Chevrolat & Fauvel, 1863; C – *Mimogonus fumator* Fauvel, 1889; D – *Holotrochus minor* Chevrolat & Fauvel, 1863; E – *Osoriellus eggersi* (Bernhauer, 1904); F – *O. exiguus* (Notman, 1925). Scale bars: 0.5 mm.

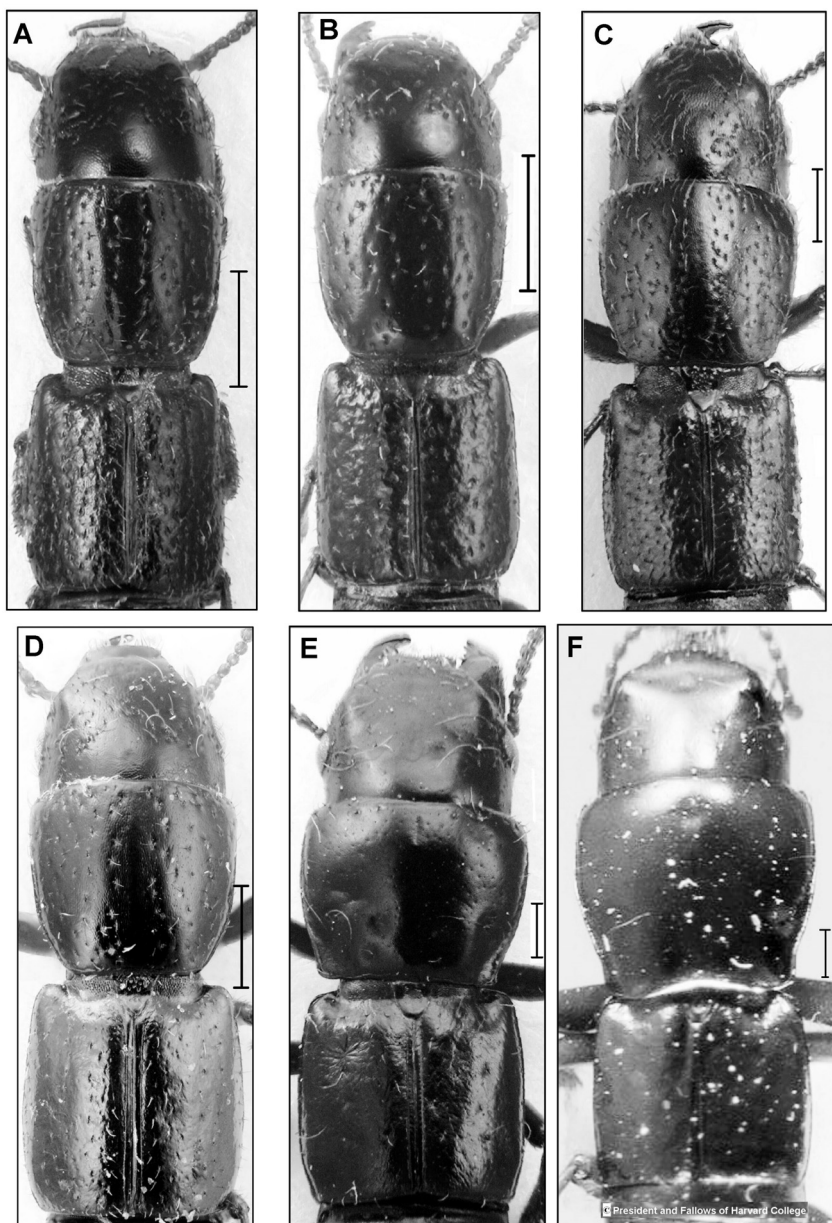


Fig. 9. Head, pronotum and elytra, showing shape, punctation and microsculpture. A – *Osoriellus lewisi* (Blackwelder, 1943); B – *O. obtusicollis* Irmeler, 2014; C – *O. schwarzi* (Notman, 1925); D – *O. haitiellus* (Darlington, 1937); E – *Antillosorius crenulifrons* (Notman, 1925); F – *A. darlingtoni* (Blackwelder, 1943). Scale bars: 0.5 mm.

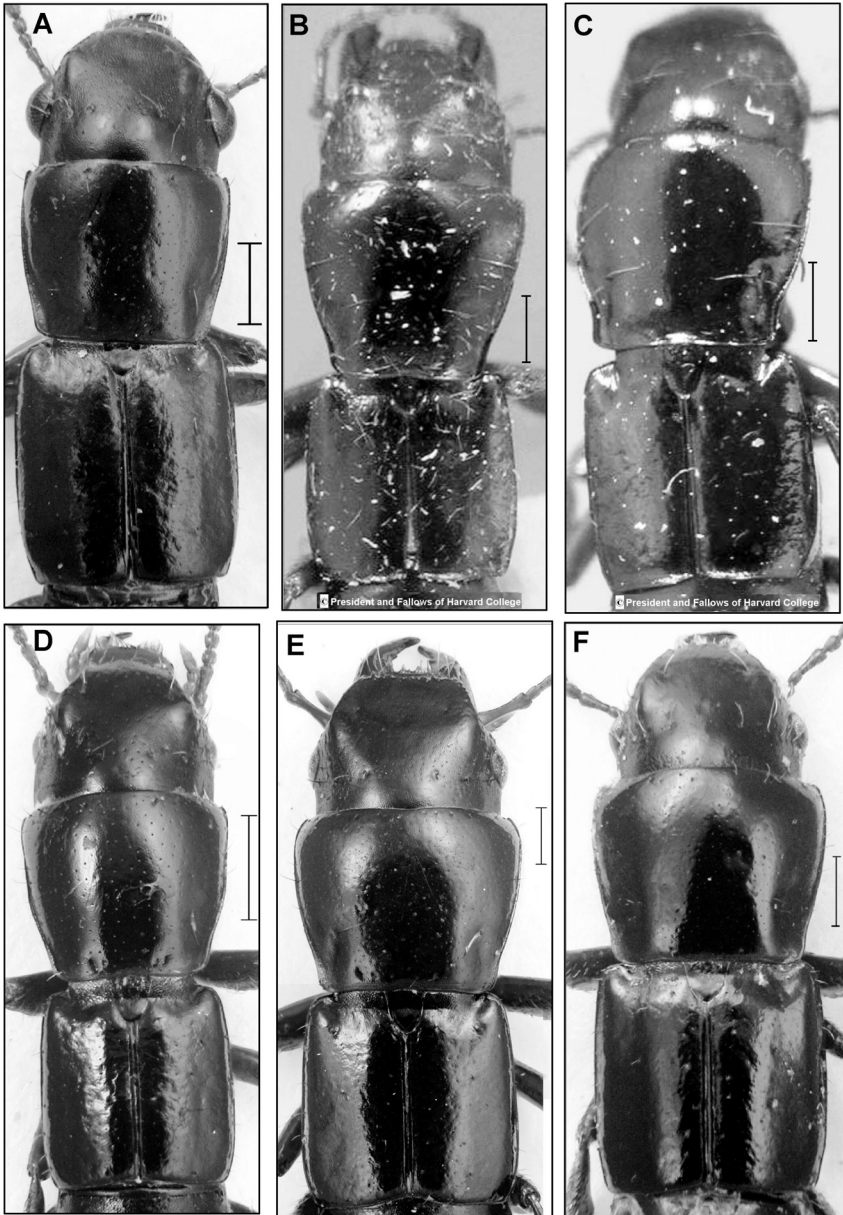


Fig. 10. Head, pronotum and elytra, showing shape, punctation and microsculpture. A – *Antillosorius martini* sp. nov.; B – *A. turquinus* (Blackwelder, 1943); C – *A. strictus* (Blackwelder, 1943); D – *A. buscki* (Notman, 1925); E – *A. manni* (Notman, 1925); F – *A. socors* (Darlington, 1937). Scale bars: 0.5 mm.

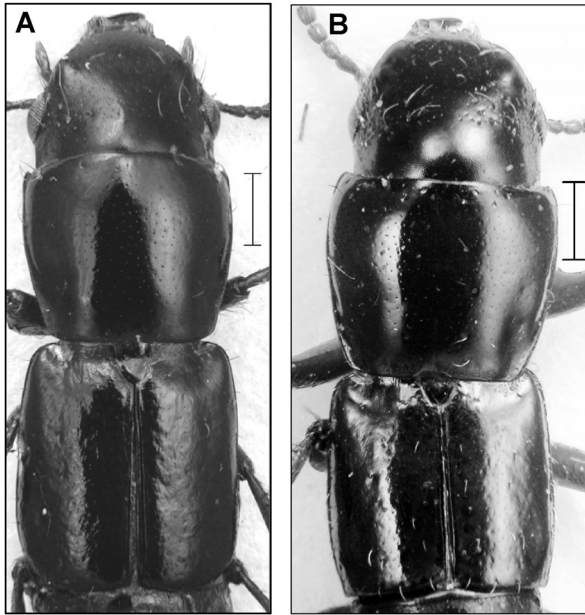


Fig. 11. Head, pronotum and elytra, showing shape, punctation and microsculpture. A – *Antillosorius cubensis* (Blackwelder, 1943); B – *A. oriente* (Blackwelder, 1943). Scale bars: 0.5 mm.

- 28 Smaller species of 4.7 mm length (Fig. 9D), pronotal punctation sparser, on average, interstices between punctures twice as wide as diameter of punctures, aedeagus (IRMLER 2014: Fig. 86C). *Osoriellus haitiellus* (Darlington, 1937)
- Larger species of 5.1–5.5 mm length (Fig. 9C), pronotal punctation denser, on average, interstices between punctures as wide as diameter of punctures, aedeagus (IRMLER 2014: Fig. 81C). *Osoriellus schwarzi* (Notman, 1925)
- 29 Abdominal tergites only with single setiferous punctures. 30
- Abdomen with moderately dense setiferous punctation. 31
- 30 Anterior edge of clypeus deeply denticulate (Fig. 9E).
- *Antillosorius crenulifrons* (Notman, 1925)
- Anterior edge of clypeus not deeply denticulate, only undulate (Fig. 9F).
- *Antillosorius darlingtoni* (Blackwelder, 1943)
- 31 Eyes extremely large and prominent (Fig. 10A). *Antillosorius martini* sp. nov.
- Eyes not or slightly prominent. 32
- 32 Pronotum strongly narrowed to posterior angles and deeply emarginate in front of posterior angles. 33
- Pronotum slightly narrowed to posterior angles and not deeply emarginate in front of them. 34
- 33 Clypeus nearly semicircular, anterior face of protibia with row of setiferous punctures (Fig. 10B). *Antillosorius turquinus* (Blackwelder, 1943)
- Anterior edge of clypeus straight, anterior face of protibia with scattered setiferous punctures (Fig. 10C). *Antillosorius strictus* (Blackwelder, 1943)

- 34 Small species of 5 mm length, elytra as long as pronotum (Fig. 10D).
 *Antillosorius buscki* (Notman, 1925)
- Larger species of at least 7 mm, elytra longer than pronotum. 35
- 35 Pronotum slightly emarginate in front of posterior angles. 36
- Pronotum smoothly rounded to posterior angles. 37
- 36 Pronotum with extremely weak microsculpture; surface nearly polished, shiny, front edge of clypeus smaller, 0.45 times as wide as space between eyes (Fig. 10F).
 *Antillosorius socors* (Darlington, 1937)
- Pronotum with deep microsculpture, surface matt, front edge of clypeus wider, 0.6 times as wide as space between eyes (Fig. 10E). *Antillosorius manni* (Notman, 1925)
- 37 Anterior face of protibia with row of setiferous punctures, microsculpture of pronotum extremely fine, nearly polished, surface shiny (Fig. 11B).
 *Antillosorius oriente* (Blackwelder, 1943)
- Anterior face of protibia with scattered setiferous punctures, pronotal microsculpture less deeper, surface rather shiny (Fig. 11A). *Antillosorius cubensis* (Blackwelder, 1943)

Discussion

The geological history of Cuba is complicated and still not clearly understood. Together with the Greater Antilles, Cuba might have developed in a relatively brief period in the late Cretaceous and early Cenozoic (DONNELLY 1988). Recent geological surveys suggest that Cuban basalt rifts might have already developed in the Jurassic and Early Cretaceous and that the geologic evolution is much more complex than imagined before (KERR et al. 1999, SAURA et al. 2008). In the middle Tertiary, a deep marine gap existed between the Greater and Lesser Antillean islands. Two potential terrestrial connections between Central America and the Greater Antilles might have existed in the Cenozoic: one between the Yucatán peninsula and Cuba and another between Honduras and Jamaica. According to DONNELLY (1988) faunal movements would have required short overwater dispersal for most of the late Mesozoic and Cenozoic.

In total, 11 genera with 34 species of Osoriinae are recorded here from Cuba. Among these, 7 genera with 20 species belong to the tribe Thoracophorini and 4 genera with 14 species to the tribe Osoriini. One species of the subtribe Eleusini, *Eleusis darlingtoni* Blackwelder, 1943, was recorded by BLACKWELDER (1943), but not reviewed here. Comparing to the list of PECK (2005) *Lispinus cordobensis* Bernhauer, 1929 and *Nacaeus spagazzini* (Bernhauer, 1933) were removed from Cuban fauna, because identifications on which PECK'S (2005) data are based, were done by examining female specimens only. *Clavilispinus crepusculus* was synonymised by IRMLER (1991) with *C. megacephalus*, *Nacaeus fauveli* was synonymised with *C. exiguus* by IRMLER (1991), *Nacaeus impar* was synonymised with *Tannea tenella* by IRMLER (2003a). Specimens of *Nacaeus tenuis* (LeConte, 1863) and *Tannea tenella* (Erichson, 1840) from Cuba were not examined for this study, but the occurrence of these species in Cuba might be possible. Among the tribe Osoriini, the Cuban specimens of *Antillosorius darlingtoni* (Blackwelder, 1943), *A. oriente* (Blackwelder, 1943) and *A. strictus* (Blackwelder, 1943) were not examined here. However, they certainly occur in Cuba, but are not endemic. *Antillosorius darlingtoni* was also found in the Dominican Republic by R. Fencl (coll. J. Janák, Prague),

A. oriente in Puerto Rico, and *A. strictus* in the Dominican Republic by L. Herman (AMNH). Cuban specimens of *Osoriellus haitiellus* (Darlington, 1937) were not examined, but the species might occur in Cuba as recorded by BLACKWELDER (1943). *Osoriellus micros* (Sharp, 1887) from Cuba was not found in the collections studied (IRMLER 2014), but unfortunately, the *Osoriellus* material of the Field Museum, Chicago, was not reviewed. *Osoriellus latipes* (Gravenhorst, 1806) should be removed from the list of Cuban species. According to IRMLER (2014) the two type specimens in the Zoological Museum, Berlin, are not conspecific and BLACKWELDER (1943) had not compared his specimens with the type specimen. In summary, 39 species of Osoriinae certainly occur in Cuba, whereas the occurrence of *Lispinus cordobensis*, *Nacaeus spegazzini*, *Nacaeus tenuis*, *Tannea tenella*, *Osoriellus latipes* and *Osoriellus micros* are doubtful and should be cancelled until more records are available.

Including the newly described species, 8 species of Osoriinae are endemic for Cuba, which accounts for 21 % of the total fauna. Other 9 species (23 % of the total fauna) are recorded from Cuba and other West Indian islands, and can be considered as endemic to the West Indies. A more detailed analysis of connections between the West-Indian islands is necessary, as the distribution of many species is incompletely understood due to the low sampling effort. Two species, *Lispinus insularis* and *Nacaeus nigrifrons*, seem to be distributed over most West-Indian islands from Cuba to Puerto Rico up to Grenada. *Antillosorius buski*, *A. darlingtoni*, *A. strictus* and *Osoriellus haitiellus* have been recorded from Cuba and Hispaniola only, *A. oriente* from Cuba and Puerto Rico, *Osoriellus lewisi* from Cuba and the nearby Cayman Islands, whereas the distribution of *A. crenulifrons* shows that Cuban fauna has also relations to the Bahamas. The endemic species of Cuba and those of the West Indies account for 44% of the Cuban species. Even one genus, i.e., *Antillosorius*, is considered to be endemic to the West Indies.

This proportion of endemic species is at the lower level of the number of endemic invertebrates of Cuba. For other insects, the proportion of endemic species are ranging between 27 and 85 % (STATER 1988, RAMOS 1988, NICHOLS 1988, LIEBHERR 1988). WILSON (1988) found an increasing rate of endemic ants correlated with the island areas; Cuba having the highest area and the highest rate of endemism. PECK & PEREZ-GELABERT (2012) came to similar results using beetle genera. According to their studies, Cuba has the highest number of endemic genera (31) followed by Hispaniola (30) and Jamaica (21). According to NICHOLS (1988), using the carabid subfamily Scaritinae, high similarities exist between Cuba and both Jamaica and the Yucatán peninsula, whereas the similarity is considerably lower between Cuba and Hispaniola. Regarding the total beetle fauna, PECK (2005) found higher similarities between Cuba and Hispaniola (56 % of native species) than between Cuba and Yucatán (42 %) and Cuba and Jamaica (26 %).

Among the Cuban Osoriinae only three species might connect Cuban fauna and that of the Yucatán peninsula, i.e. *Osoriellus obtusicollis*, *O. exiguus*, and *Nacaeus dejectus*. *Nacaeus dejectus* is recorded from Mexico to Panama, but not from the West Indian islands. Six species are distributed all over the West Indies and the Central American mainland, and might also have used the Yucatán bridge to invade Cuba. The connection between Central America and Cuba is also supported by the supposed close relationship of the newly described species *Allotrochus cubensis* and *A. marginatus*, which is similarly distributed as *N. dejectus*, and is

recorded from the Central American mainland but not from the West Indian islands. In contrast, the newly described *Thoracophorus cubensis*, has its closest relatives on the Lesser Antilles (*T. simplex* Wendeler, 1930) and in Venezuela (*T. venezuelanus* Irmeler, 2010).

Little information is available about the recent introductions of insect species. Peck (2005) estimated 11 beetle species to be introduced to Cuba. Thus, the discovery of four pantropical species (i.e. 10 % of Cuban fauna) only in the subfamily Osoriinae is astonishing. These species can be certainly regarded as invasive species for Cuba. These four species, *Nacaeus impressicollis*, *N. planellus*, *Clavilispinus exiguus*, and *Mimogonus fumator*, are recorded from many tropical countries all over the world and are of unknown origin. *Mimogonus fumator* might have immigrated from outside of the Neotropical region, presumably directly from Africa or via East Asia, whereas *Nacaeus impressicollis* might be transported directly from East Asia. Another set of six species, i.e. *Clavilispinus megacephalus*, *Clavilispinus minutus*, *Clavilispinus politus*, *Lispinus striola*, *Nacaeus flavipennis*, and *Thoracophorus guadalupensis*, is regarded as being distributed over the whole Neotropical region. Certainly some of them can also be supposed invasive species for Cuba. Thus, the percentage of invasive species is certainly higher than 12 % and shows that the immigration process is still not finished.

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