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The unbelievable fauna of American Lamiinae  
(Coleoptera: Cerambycidae): description of two new species,  
transference, and notes in Acanthocinini,  
and a new record in Calliini

Antonio Santos-Silva

Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil

Juan Pablo Botero

Grupo de Sistemática Molecular, Laboratorio de Entomología, Pontificia Universidad Javeriana. Bogotá, Colombia

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# The unbelievable fauna of American Lamiinae (Coleoptera: Cerambycidae): description of two new species, transference, and notes in Acanthocinini, and a new record in Calliini

Antonio Santos-Silva

Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil  
toncriss@uol.com.br

🌐 <https://orcid.org/0000-0001-7128-1418>

Juan Pablo Botero

Grupo de Sistemática Molecular, Laboratorio de Entomología, Pontificia Universidad Javeriana. Bogotá, Colombia  
jp\_bot@yahoo.com

🌐 <http://orcid.org/0000-0002-5547-7987>

**Abstract.** Two new species and one new genus of Lamiinae (Coleoptera: Cerambycidae) are described in Acanthocinini: *Embera flava* **new species, new genus**, from Panama; and *Nealcidion lingafelteri* **new species** from Costa Rica. The species-group name of *Nealcidion napoensis* Nascimento and McClarin, 2018 is corrected and morphological variations in *Leptostylus cristulatus* Bates, 1872 are reported. *Trypanidius mimivavus* Carelli, Monné, and Souza, 2013 is redescribed and transferred to *Carphina* Bates, 1872, forming the **new combination** *Carphina mimivavus*. *Colombicallia curta* Galileo and Martins, 1992 (Calliini) is recorded from Panama for the first time.

**Key words.** Central America, Neotropical region, South America, taxonomy.

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## Introduction

The biodiversity of species of Lamiinae in America is surprising, often revealing new species or new distribution patterns. The study of specimens sent by the late James Earl Wappes allowed us to describe two new species and one new genus in Acanthocinini, report variations in one species in the same tribe, and report a new country record in Calliini.

*Carphina* Bates, 1872 (Acanthocinini) is a relatively small genus including 11 species distributed from Mexico to southern South America (Bezark 2023b; Monné 2023; Tavakilian and Chevillotte 2023). Herein, a transfer from *Trypanidius* to *Carphina* is reported.

*Nealcidion* Monné, 1977 is a large genus of Acanthocinini including 62 species distributed from Mexico to southern South America (Bezark 2023b; Monné 2023; Tavakilian and Chevillotte 2023). This is a troublesome genus with species that probably should be grouped into more than three genera. Although we describe this new species in the genus *Nealcidion*, the generic assignment may be incorrect. However, a revision of the genus is needed to better understand generic limits. Additionally, we correct the species-group name of *N. napoensis* Nascimento and McClarin, 2018.

*Leptostylus* LeConte, 1852 (Acanthocinini) is another very troublesome genus including species with variable features, which prevents an unambiguous definition of the genus and does not allow us to reliably separate it from other genera, for example, *Leptostylopsis* Dillon, 1956. Currently, it includes 90 species distributed from Canada to southern South America (Bezark 2023b; Monné 2023; Tavakilian and Chevillotte 2023). Herein we report morphological variations in *L. cristulatus* Bates, 1872.

*Colombicallia* Galileo and Martins, 1992 is a small genus of Calliini, with one species known from Colombia and another from Costa Rica (Bezark 2023b; Monné 2023; Tavakilian and Chevillotte 2023). A new country record is reported for *C. curta* Galileo and Martins, 1992.

## Materials and Methods

Photographs were taken at MZSP with a Canon EOS TD Mark II camera and Canon MP-E 65 mm f/2.8 1–5× macro lens, and Zerene Stacker AutoMontage software. Measurements were taken in “mm” using measuring ocular Hensoldt/Wetzlar - Mess 10 in the Leica MZ6 stereomicroscope, also used in the study of the specimens.

In examined material of known species, only specimens used to establish new records are listed; references on the known species are restricted to the original description.

The acronyms used in the text are as follows:

- FSCA** Florida State Collection of Arthropods, Gainesville, Florida, U.S.A.  
**LGBC** Larry G. Bezark Collection, Sacramento, California, U.S.A.  
**MZSP** Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil  
**SWLC** Steven W. Lingafelter Collection, Hereford, Arizona, U.S.A.  
**USNM** National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

## Results

### ACANTHOCININI Blanchard, 1845

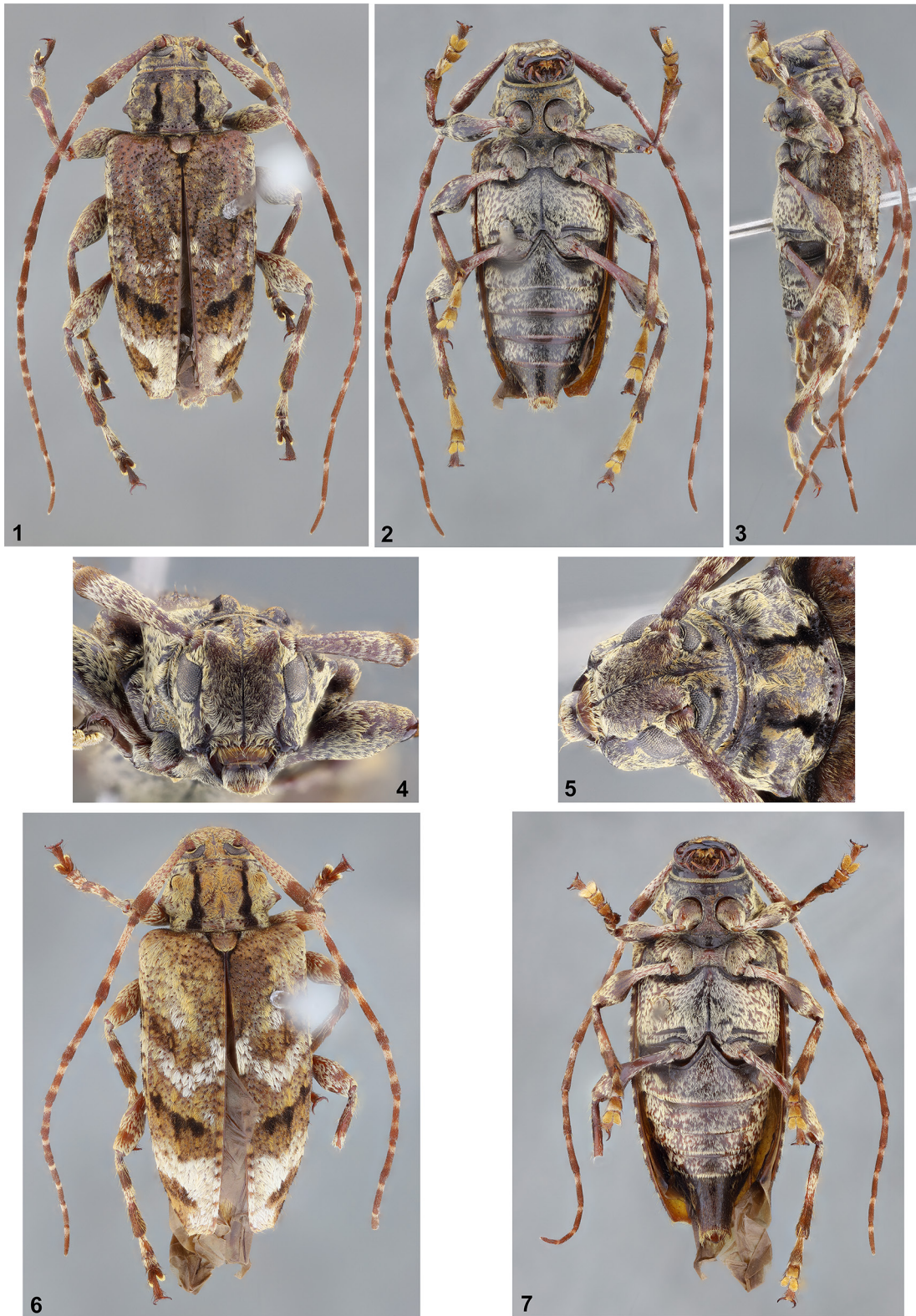
#### *Carphina mimicavus* (Carelli, Monné, and Machado, 2013), new combination

(Fig. 1–7)

*Trypanidius mimicavus* Carelli et al. 2013: 256.

**Redescription. Male** (Fig. 1–5). Integument mostly dark brown, blackish on some areas. Apex of palpomeres dark orangish brown, this area wider on maxillary palpomere IV and labial palpomere III; ligula orangish brown.

**Head.** Frons densely, minutely punctate; with dense pubescence partially obscuring integument close to eyes and clypeus, pubescence yellowish-white gradually pale yellow toward antennal tubercles; remaining surface with abundant, both yellowish-white and pale-yellow pubescence not obscuring integument, pubescence distinctly shorter than on area close to eyes and clypeus, with sparse, short, erect yellowish-white setae interspersed; with one long, erect brown seta close to eyes. Vertex with abundant, both pale-yellow and yellow pubescence partially obscuring integument, except glabrous median groove, this area widened between antennal tubercles and upper eye lobes, and sparser, shorter yellowish-white pubescence posteriorly close to prothorax. Area behind upper eye lobes with dense yellowish-white pubescence close to eye and abundant, both yellowish and whitish pubescence, absent on some irregular areas, whitish pubescence shorter and sparser than yellowish pubescence, except irregular, small spot with sparse dark-brown pubescence close to vertex; with a few long, erect brown setae near eye. Area behind lower eye lobes with abundant yellowish pubescence partially obscuring integument, except subglabrous area about middle and area close to prothorax. Genae glabrous on superior third close to frons and apex, with dense pale-yellow pubescence on remaining surface close to eyes, and abundant pale-yellow pubescence partially obscuring integument on remaining surface, this latter pubescence gradually yellowish-white toward ventral surface. Antennal tubercles with abundant, short, both yellowish-white and brownish pubescence not obscuring integument frontally and apically, and abundant yellow pubescence partially obscuring integument on remaining surface. Gula smooth, glabrous, except intermaxillary process finely punctate with yellowish-white pubescence not obscuring integument. Distance between upper eye lobes 0.27 times distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.61 times distance between outer margins of eyes. Antennae 2.1 times elytral length, reaching elytral apex at base of antennomere VII. Scape with abundant yellow pubescence on basal quarter not obscuring integument, abundant yellowish-white pubescence not obscuring integument on remaining basal  $\frac{3}{4}$ , abundant yellowish-brown pubescence not obscuring integument on apical quarter, moderately sparse brown pubescence on ventral and inner surfaces of apical quarter, and abundant yellowish-white pubescence on outer surface of apical quarter. Pedicel mostly with dark yellowish-brown pubescence dorsally and laterally, and abundant yellowish-white pubescence ventrally (most of yellowish-white pubescence lost on left pedicel). Antennomere III with abundant yellowish-white pubescence about basal third



**Figures 1–7.** *Carphina mimicavus* (Carelli, Monné, and Machado, 2013). 1–5) Male: 1) Dorsal habitus; 2) Ventral habitus; 3) Lateral habitus; 4) Head, frontal view; 5) Head and pronotum, oblique view. 6–7) Female: 6) Dorsal habitus; 7) Ventral habitus.

and sparse brownish pubescence on remaining surface, except yellowish-white pubescent ring close to apical quarter and yellowish-brown pubescence apically; with sparse, moderately long, erect yellowish setae ventrally. Antennomeres IV–VII with brownish pubescence not obscuring integument, except two yellowish-white pubescent rings, one on basal quarter, wider on IV, another on apical third; with short dark yellowish-brown setae directed backward apically, setae lighter toward VII. Antennomeres VIII–XI with moderately abundant brownish pubescence not obscuring integument, except yellowish-white pubescent ring near base; VIII–X with a few short yellowish setae directed backward apically; XI with abundant, short yellowish-white setae directed backward apically. Antennal formula (ratio) based on length of antennomere III: scape = 1.06; pedicel = 0.09; IV = 0.89; V = 0.71; VI = 0.61; VII = 0.55; VIII = 0.54; IX = 0.52; X = 0.48; XI = 0.48.

**Thorax.** Prothorax wider than long; with large, subconical tubercle about middle. Pronotum with five large tubercles, one moderately elevated, rounded, located on each side of anterior third, one subconical, elevated, located on each side of middle of anterior third, another longitudinal, moderately elevated, located centrally between middle and posterior fifth; sparsely, coarsely punctate near anterior margin and transverse row of coarse punctures near posterior margin, posterior punctures coarser and denser than anterior punctures; remaining surface with sparse minute punctures; with moderately abundant, both yellowish-brown and yellowish-white pubescence not obscuring integument, except one wide, longitudinal, sinuous blackish pubescent band located between middle and lateral margin, from anterior fifth to posterior margin, gradually widened toward posterior margin. Sides of prothorax with dense pale-yellow pubescence, absent on some regions of anterior quarter, pubescence slightly sparser and yellowish-white centrally. Prosternum with abundant yellowish-white pubescence not obscuring integument, except subglabrous narrow area close to anterior margin. Prosternal process with abundant yellowish-white pubescence not obscuring integument, except sparser pubescence apically; narrowest area 0.27 times procoxal cavity. Mesoventrite with sparse yellowish-white pubescence, more abundant on each side of central region, and abundant pale-yellow pubescence partially obscuring integument laterally. Mesanepisterna with abundant pale-yellow pubescence, with abundant, irregular subglabrous areas interspersed; mesepimera with abundant yellowish-brown pubescence not obscuring integument, except abundant dark-brown pubescence close to elytra. Mesoventral process with abundant yellowish-white pubescence not obscuring integument, pubescence denser on margins; apex emarginate centrally, 0.9 times mesocoxal width. Metanepisterna with abundant pubescence with abundant, irregular glabrous areas interspersed, pubescence yellowish-brown basally, gradually yellowish-white toward apex. Metaventricle with dense pale-yellow pubescence laterally with abundant, irregular glabrous areas interspersed, pubescence more yellowish-brown basally, and abundant yellowish-white pubescence not obscuring integument, shorter than on sides, except glabrous metathoracic discrimen. Scutellum with abundant yellowish-brown pubescence not obscuring integument anterocentrally, abundant yellowish-white pubescence not obscuring integument on remaining surface, except blackish pubescence on sides of anterior half.

**Elytra.** Humeral carina well marked from humerus to posterior quarter, then slightly distinct toward apical sixth; centrobasal crest slightly elevated, elongated, tuberculate; with small tubercles on basal third near suture; with three longitudinal, slightly elevated carinae dorsally, one from apex of centrobasal crest to apical sixth, one from near base to apical sixth, these two carinae fused apically, another less distinct, located close to humeral carina, from anterior third to posterior quarter; all longitudinal carinae with sparse, small tubercles; apex truncate, slightly concave; dorsal carina with dashed yellow pubescent bands, pubescence paler on anterior half; area close to scutellum and suture with small blackish pubescent macula; with U-shaped whitish pubescent band about middle, reaching suture, transversely projected toward humeral carina laterally; apical quarter with wide whitish pubescent macula close to suture, anteriorly obliquely projected toward epipleural margin but not reaching it; area between whitish pubescent bands with wide, oblique, partially fragmented blackish pubescent band, ascending from near suture to humeral carina; with abundant yellowish-brown pubescence dorsally between oblique blackish pubescent band and whitish apical pubescence; remaining posterior quarter with abundant yellowish-brown pubescence and irregular blackish pubescent maculae interspersed; remaining anterior with both yellowish and whitish pubescence not obscuring integument; area between humeral carina and epipleural margin with abundant yellowish-brown pubescence basally, with wide, transverse, fragmented whitish pubescent band on middle, continuing that on dorsal surface, with longitudinal whitish pubescent band close to humeral carina from near base to transverse whitish pubescent band, dashed whitish pubescent band close to epipleural margin, abundant

grayish-white pubescence on remaining anterior half, and abundant yellowish-brown pubescence not obscuring integument on remaining surface; with moderately long, erect yellowish-brown setae throughout. **Legs.** Femora with abundant yellowish-brown pubescence, more pale-yellow on metafemora, with abundant, irregular, small glabrous areas interspersed, except dorsal surface of femoral club with transverse, narrow brownish pubescent band. Tibiae with abundant yellowish-white pubescence on basal quarter and wide yellowish-white pubescent ring about middle, not reaching ventral surface on protibiae; remaining surface with brownish pubescence not obscuring integument, sparser apically, except apical half of ventral surface of protibiae and apex of ventral surface of meso- and metatibiae with bristly yellowish-brown pubescence, denser on protibiae; with long, erect yellowish setae dorsally and laterally, more abundant on metatibiae. Dorsal surface of tarsomeres I–II mostly with yellowish-white pubescence obscuring integument and remaining tarsomeres with brown pubescence not obscuring integument; metatarsomere I slightly longer than II–III together.

**Abdomen.** Sides of ventrites 1–4 with abundant yellowish-white pubescence not obscuring integument, with abundant, irregular, subglabrous areas interspersed, central area with abundant grayish-white pubescence not obscuring integument, except glabrous apex of central region of ventrite 1 and entire apex of ventrites 2–4. Ventrite 5 laterally with moderately sparse brownish pubescence and yellowish-white pubescent maculae interspersed; central region with sparse, mostly whitish pubescence; apex strongly concave centrally, making sides triangularly projected; central region slightly longer than ventrite 4.

**Female** (Fig. 6–7). Similar to males, differing: antennae shorter, 1.7 times elytral length, reaching elytral apex at base of antennomere VIII; and central region of abdominal ventrite 5 longer than 3–4 together.

**Variation.** General dorsal pubescence distinct denser.

**Dimensions in mm (males/female).** Total length, 10.80–13.90/13.75; prothoracic length, 1.80–2.40/2.20; anterior prothoracic width, 2.20–2.75/2.60; posterior prothoracic width, 2.55–3.25/3.15; maximum prothoracic width, 3.15–4.10/3.90; humeral width, 4.00–5.45/5.15; elytral length, 7.80–10.15/9.95.

**Material examined.** BOLIVIA, *Santa Cruz*: Caballero [Manuel María Caballero], Yungas de S.J.P, 4 males, 1 female, 1.II.1993, Fray Andrés Langer leg. (3 males, FSCA; 1 male, 1 female, MZSP)

**Remarks.** According to Carelli et al. (2013): “*Trypanidius mimicavus* **new species** differs from the other species of the genus mainly by the presence of four anterolateral tubercles on the prothorax, and by the long and semierect setae on many parts of the body. All other *Trypanidius* species have the sides of prothorax with only two tubercles, and the body without long and semierect setae.” *Trypanidius mimicavus* cannot belong to *Trypanidius* because it has erect setae on the elytra (absent in *Trypanidius*) and the apical margin of ventrite 5 is concave, making the outer angles spiniform (rounded in *Trypanidius*). *Trypanidius mimicavus* belongs to *Carphina* Bates, 1872. The holotype male and the paratype female (the latter is the specimen illustrated in the original description) were lost during the fire that destroyed the MNRJ. These two specimens had the same data as the specimens examined by us in this work. We think that a designation of a neotype is not necessary because the species can be easily identified and separated from the other species of *Carphina*. Even so, we redescribed the species so that there are no future doubts.

*Carphina mimicavus* is similar to *C. elliptica* (Germar, 1823) (Fig. 8–14) but differs as follows: scape without dark ring just after middle (Fig. 1–4, 6–7); genae longer than lower eye lobe (Fig. 4); anterolateral tubercles on the pronotum moderately elevated (Fig. 5); dark pubescent bands on the pronotum straight and widened toward posterior margin (Fig. 1, 6); and metaventrite in males without dense bristly pubescence (Fig. 2–3). In *C. elliptica*, the scape has a dark ring just after middle (Fig. 8, 10–11, 13–14), genae shorter than lower eye lobe (Fig. 11), anterolateral tubercles on the pronotum are slightly distinct (Fig. 12), dark pubescent bands on the pronotum arched and not widened toward posterior margin (Fig. 8, 13), and metaventrite in males with dense bristly pubescence (Fig. 9–10).

The specific epithet “mimicavus” is a noun phrase in apposition (See Carelli et al. 2013: 257), therefore, it cannot be changed to agree in gender with the generic name.



**Figures 8–14.** *Carphina elliptica* (Germar, 1823). **8–12** Male from Brazil (Goiás, Colina, MZSP 55323): **8**) Dorsal habitus; **9**) Ventral habitus; **10**) Lateral habitus; **11**) Head, frontal view; **12**) Head and pronotum, oblique view. **13–14**) Female from Brazil (MZSP 55324): **13**) Dorsal habitus; **14**) Ventral habitus.



***Embera* Santos-Silva and Botero, new genus**

(Fig. 15–19)

**Type species.** *Embera flava* Santos-Silva and Botero, **new species**, here designated.**Etymology.** The genus name refers to the name of the indigenous people that inhabit Panama, Colombia, and Ecuador. Feminine gender.

**Description. Female.** Small-sized; body convex and stouter (Fig. 15–17). Head not elongated behind eyes (Fig. 15), not retractile (Fig. 17). Frons (Fig. 18) transverse. Upper eye lobes wide; distance between them about twice width of one upper lobe (Fig. 15). Lower eye lobes (Fig. 18) slightly longer than genae. Antennae 11-segmented, about as long as body; scape slightly, gradually widened from base to near apex, widened apically on inner margin, without apical cicatrix; pedicel about as long as basal diameter of scape, with a few long, erect setae ventrally; antennomeres III–XI cylindrical, without erect setae ventrally; antennomere III distinctly longer than IV; antennomeres V–X gradually shorter; antennomere XI slightly longer than X. Prothorax (Fig. 15) wider than long; anterior constriction narrow, well marked; sides divergent from base to middle, with rounded protuberance from this point to posterior fifth. Pronotum with three gibbosities, one subcircular on each side of anterior third, another elongated, located centrally from slightly before middle to about posterior quarter; moderately abundantly, coarsely punctate, punctures coarser on posterior fifth, not aligned centrally, aligned and following toward sides of prothorax laterally. Central area of prosternal process (Fig. 16) distinctly narrowed and about one-fifth procoxal width. Mesoventral process (Fig. 16) slightly narrowed centrally; apex not emarginate, slightly convex, slightly wider than half mesocoxal width. Elytra with erect, very thick setae with their apices subtruncate (Fig. 19); with small, slightly elevated tubercles without tufts of erect setae, tubercles more distinct and abundant basally between scutellum and humeri; humeral carina slightly marked, not reaching elytral apex; centrobasal crest elongated, slightly elevated, tuberculate; apex narrowly rounded; dorsal surface with three longitudinal carinae almost reaching elytral apex, innermost slightly distinct, starting on apex of centrobasal crest, one starting on base near centrobasal crest, another starting on base close to humerus; abundantly, coarsely punctate. Femora pedunculate-clavate. Tibiae gradually widened from base to apex, more distinctly in protibiae. Metatarsomere I about as long as II–III together. Apical margin of ventrite 5 rounded.

**Remarks.** The general appearance of *Embera* new genus is similar to that of *Leptostylus* LeConte, 1852 and *Leptostylopsis* Dillon, 1956. However, *Embera* differs from them by the presence of erect setae on the elytra. American Acanthocinini are divided in two groups of genera: one with erect setae on the elytra, the other without erect setae. *Leptostylus* is a problematic genus including very different species (shape of the body, shape of the elytral apex, shape of the elytra, width of the prosternal and mesoventral processes, etc.). The most problematic feature is the width of the prosternal and mesoventral processes, which cannot be used as a differential feature due to their extremely variable size in the species currently included in *Leptostylus*. Although many species have the prosternal process centrally wider than  $\frac{1}{3}$  of the procoxal width, there are species with the prosternal process centrally narrower than  $\frac{1}{3}$  of the procoxal width, as well as some species with the prosternal process about as wide as procoxal width. In all species of *Leptostylopsis* examined by us, the prosternal and mesoventral processes are wide, especially the latter, which often is wider than mesocoxal width. *Embera* is also similar to *Carpheolus* Bates, 1885 differing especially by the presence of erect setae on the elytra (absent in *Carpheolus*), and by the last abdominal segment short (distinctly surpassing elytral apex in females of *Carpheolus*). Among the genera with erect setae on the elytra, *Embera* is more similar to *Oxathres* Bates, 1864 (only some species) but differs by the last abdominal segment short (distinctly surpassing elytral apex in females of *Oxathres*).

*Embera* can be included in the alternative of couplet “21” in the key by Monné et al. (2020):

- 21(19). Prothorax without distinct lateral tubercle ..... 21'  
 — Prothorax with distinct lateral tubercle ..... 22
- 21'(21). Body slender; antennae distinctly longer than body; erect elytral setae thin .....  
 ..... *Graphisurus* Kirby, 1837 (part)  
 — Body stout; antennae about as long as the body; erect elytral setae thick .....  
 ..... *Embera* Santos-Silva and Botero, new genus



**Figures 15–19.** *Embera flava* new species, holotype female. 15) Dorsal habitus; 16) Ventral habitus; 17) Lateral habitus; 18) Head, frontal view; 19) Elytral erect setae.

***Embera flava* Santos-Silva and Botero, new species**

(Fig. 15–19)

**Description. Holotype female.** Body mostly black. Anteclypeus brownish. Labrum brown anteriorly.

**Head.** Frons densely, finely punctate; with abundant, short, decumbent, squamiform setae, pale yellow toward clypeus, yellowish-white centrally toward vertex, and yellowish-brown laterally toward antennal tubercles, with abundant, irregular areas with short, decumbent, squamiform dark-brown setae not obscuring integument interspersed. Vertex with abundant, short, decumbent, squamiform dark-brown setae between antennal tubercles and upper eye lobes, dense dark-brown pubescence partially obscuring integument on sides of area close to prothorax, irregular lateral areas with short, decumbent, squamiform yellowish-white setae interspersed, except glabrous diamond-shaped central area between antennal tubercles and upper eye lobes, and longitudinal central area close to prothorax. Antennal tubercles with abundant, short, decumbent, squamiform dark-brown setae basally, with squamiform, both whitish and yellowish setae interspersed, dense, short, decumbent, squamiform pale-yellow setae centrally, and moderately sparse, both brown and yellowish-white setae apically. Area behind eyes with a few short, decumbent yellowish-white setae close to eye, glabrous on remaining surface. Genae with abundant, short, decumbent, squamiform whitish setae close to eye, except glabrous area close to frons, abundant yellowish-white pubescence on posterior half, and dark-brown pubescence not obscuring integument between two former areas; with one long, erect, thick setae interspersed on dark-brown pubescence, setae dark brown on basal half, yellowish-brown on apical half. Wide central area of postclypeus with abundant, thick, decumbent, both yellowish and whitish setae not obscuring integument close to frons, except glabrous central region, and sparse, short, whitish setae directed forward close to anteclypeus, except glabrous central area; with one long, erect seta on each side, setae dark brown basally, yellowish-brown on its remaining surface. Sides of postclypeus glabrous. Labrum with abundant whitish pubescence not obscuring integument on posterior  $\frac{3}{4}$ , glabrous on anterior quarter, except fringe of yellowish-brown setae on anterior margin; with long, erect yellowish-brown setae interspersed on wide central area. Distance between upper eye lobes 0.30 times distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.57 times distance between outer margins of eyes. Antennae 1.25 times elytral length, reaching elytral apex. Scape with abundant, thick dark brown pubescence not obscuring integument, and abundant, large areas with dense, short, decumbent, squamiform, both pale-yellow and white setae interspersed. Pedicel with abundant dark-brown pubescence not obscuring integument. Antennomere III with dense, short, decumbent, squamiform pale-yellow setae obscuring integument, with irregular areas with dark-brown pubescence interspersed, except apex only with dark-brown pubescence not obscuring integument. Antennomere IV with dense, thick, both pale-yellow and whitish pubescence on basal half, and abundant brown pubescence not obscuring integument on posterior half, with short, erect yellowish setae interspersed. Antennomeres V–XI with abundant yellowish-white pubescence not obscuring integument. Antennal formula (ratio) based on length of antennomere III: scape = 1.19; pedicel = 0.13; IV = 0.61; V = 0.45; VI = 0.40; VII = 0.39; VIII = 0.32; IX = 0.31; X = 0.27; XI = 0.34.

**Thorax.** Pronotum with large, irregular macula with dense, short, decumbent, squamiform pale-yellow setae on sides of central region; with irregular maculae with dense, short, decumbent, squamiform white setae, maculae denser laterally, sparse centrally, absent close to inner margin of pale-yellow maculae; remaining surface with abundant, thick dark-brown pubescence, dense on some areas, sparse or almost absent on others. Sides of prothorax with abundant, irregular areas with dense, short, decumbent, squamiform, both whitish and yellowish setae, with sparse dark brown pubescence between them, except area close to posterior margin with sparse whitish pubescence. Sides of prosternum with irregular areas with dense, short, decumbent, squamiform, both pale-yellow and whitish setae, with sparse brown pubescence between them; wide central area with abundant whitish pubescence not obscuring integument. Prosternal process with abundant yellowish-white pubescence not obscuring integument; narrowest area 0.18 times procoxal width. Wide central area of mesoventrite with moderately abundant whitish pubescence centrally, sparse laterally; lateral area close to mesocoxal cavities with dense, short, decumbent, squamiform yellowish-white setae. Mesanepisterna with abundant, short, decumbent, squamiform yellowish-white setae superiorly close to mesepimeron and mesoventrite, and abundant dark-brown pubescence not obscuring integument on remaining surface, with a few short, decumbent, squamiform yellowish-white setae interspersed. Mesepimera with abundant yellowish-white pubescence close to elytra and

metanepisternum, and moderately sparse dark brown pubescence on remaining surface. Mesoventral process abruptly inclined close to mesoventrite; with abundant yellowish-white pubescence not obscuring integument, except glabrous sides and apex. Metanepisterna with abundant brownish pubescence not obscuring integument, and maculae with short, decumbent, squamiform yellowish-white setae interspersed. Metaventricle with abundant, short, decumbent, squamiform yellowish-white setae laterally, denser toward apex, with irregular areas with sparse brownish pubescence interspersed; remaining surface with abundant yellowish-white pubescence not obscuring integument, except glabrous central area on posterior 2/3. Scutellum with minute, very sparse brownish pubescence and a few short, decumbent, squamiform whitish setae interspersed on posterior third. **Elytra.** Punctures deep, subtriangular; with dense, short, decumbent, squamiform yellowish-brown setae, absent on nearly all tubercles, except: large area close to suture, starting at level of apex of scutellum and surpassing middle of elytra, with abundant dark-brown pubescence on some regions, glabrous on others; subglabrous area laterally, from epipleural margin to sides of dorsal surface, located between anterior third and middle of elytra; moderately small area with brown pubescence not obscuring integument laterally, from epipleural margin to sides of dorsal surface, located on posterior quarter; moderately small area with brown pubescence not obscuring integument on entire apex; irregular, large macula with dense, short, decumbent, squamiform white setae on sides of anterior third, dividing area with yellowish-brown squamiform setae; and zig-zag band with dense, short, decumbent, squamiform white setae, from suture to humeral carina, located after middle of elytra, this band following longitudinally close to suture toward posterior area with brown pubescence. Erect setae white, yellowish-brown, or dark brown. **Legs.** Coxae with abundant, mostly yellowish pubescence not obscuring integument. Trochanters with sparse brownish pubescence, and one long, erect yellowish-brown seta. Femoral peduncles with abundant whitish pubescence almost obscuring integument, pubescence whiter on some areas; femoral clubs with dense yellowish pubescence ventrally and remaining surface with dense, short, decumbent, squamiform yellowish-brown setae, whiter on basal region of inner surface, with abundant small areas with one short, erect brownish seta interspersed. Tibiae with dense, short, decumbent, squamiform yellowish-brown setae dorsally, gradually becoming finer and paler toward sides, except base with sparse yellowish-brown pubescence dorsally and laterally, area before middle with abundant, thick brown pubescence dorsally and laterally, apex of dorsal and lateral surfaces with abundant, both brown and yellowish-brown pubescence not obscuring integument, and dorsal sulcus of mesotibiae with abundant, short, erect dark-brown setae. Ventral surface with abundant yellowish-brown pubescence, gradually bristly toward apex. Dorsal surface of tarsi with abundant, both yellowish-brown and grayish-white pubescence not obscuring integument.

**Abdomen.** Ventricle 1 with abundant whitish pubescence centrally not obscuring integument, and abundant, irregular maculae with short, decumbent, squamiform white setae laterally, with sparse brownish pubescence among them; ventrites 2–4 with abundant, short, decumbent, squamiform, both yellowish and whitish setae with sparse brownish pubescence among them; ventrite 5 with abundant, short, decumbent, squamiform yellow setae on sides of central region, moderately abundant, both thin and thick whitish pubescence centrally, and thin yellowish-brown and thick and whitish pubescence apically.

**Dimensions in mm.** Total length, 7.50; prothoracic length, 1.35; anterior prothoracic width, 1.60; posterior prothoracic width, 2.00; maximum prothoracic width, 2.15; humeral width, 3.25; elytral length, 5.70.

**Type material.** Holotype female from PANAMA, *Veraguas*: Santa Fé, Alto Piedra, 850 m, 11-16.VI.2010, J.B. Heppner leg. (FSCA).

**Etymology.** From Latin “*flavus*” (yellow), referring to the main coloration of elytral pubescence.

**Remarks.** See remarks in *Embera new genus*.

### ***Leptostylus cristulatus* Bates, 1872**

(Fig. 20–25)

*Leptostylus cristulatus* Bates 1872: 213.

**Remarks.** *Leptostylus cristulatus* was described based on a single specimen from Nicaragua. According to Bates (1872) (translated): “Oval, brown, with a grayish-white discoidal macula on each side behind the middle of the elytra; thorax with two large tubercles near the anterior margin, and two other tubercles on each side [prothoracic



Figures 20–25. *Leptostylus cristulatus* Bates, 1872. 20–23) Female from Belize; 20) Dorsal habitus; 21) Ventral habitus; 22) Lateral habitus; 23) Head, frontal view. 24) Holotype, by Jesus Santiago Moure. 25) Specimen from Panama, by Larry G. Bezark.

tubercles]; elytra acutely rounded apically, with centrobasal crest bearing four tubercles, and with three rows of tubercles on the disc; antennae with segments 4–9 yellowish-testaceous basally.” However, the photograph of the holotype (Fig. 25) shows that there is an elongated whitish pubescent macula close to the suture on the anterior third, and two small, narrow, and elongated whitish pubescent spots on the dorsal surface near the superior region of the wide and oblique whitish pubescent band on the posterior half. Furthermore, the base of antennomere IV is as on III, and it is antennomeres V–IX that have a whitish pubescent ring anteriorly; in fact, the pubescent ring does not start on the base in some of these antennomeres. Bates (1885) recorded *L. cristulatus* from Panama, and we do not know how many specimens from this country Bates examined. However, we believe that the specimen illustrated in Bezark (2023a) (Fig. 24) is, at least, one of these specimens. This specimen does not have the whitish pubescent macula on the anterior third of the elytra and the two small whitish pubescent spots were replaced by a wide and transverse whitish pubescent band that reaches the suture, which was not mentioned by Bates (1885). Furthermore, the dark and arched area starting on apex of the posterior whitish pubescent band is more distinct, forming a semicircle when considering both elytra.

Although we examined a single specimen of *L. cristulatus*, we did examine photographs of specimens from Mexico and Honduras identified as *L. cristulatus* (see Bezark 2023a) as well as photographs of five specimens from Costa Rica (as we are not authorized to illustrate these specimens from Costa Rica and since they are of low resolution, we prefer not to indicate the website). However, these specimens from Costa Rica are practically identical to the holotype in shape and general appearance of the elytral pubescent maculae.

Based on the specimen examined and photographs (including the holotype), we can report the following variations in *L. cristulatus*:

1. Antennomeres V–IX with wide and dense yellowish-white pubescent ring (Fig. 25) or absent on VI and VIII (Fig. 20). The absence of the yellowish-white pubescent ring on the antennomeres VI and VIII was also observed through photograph in a specimen from Honduras;
2. Anterolateral tubercles on the pronotum from subconical to distinctly rounded apically;
3. Elytral length from 1.6 (specimen from Belize) to 1.7 (holotype, measured through the photograph) the humeral width. Although the specimen from Belize is the widest specimen the other features agree very well with the other specimens. Furthermore, the measurement of some other specimens through photographs showed intermediate widths (1.75). Therefore, we consider as an intraspecific variation;
4. Whitish pubescent macula on the anterior third of the elytra present (Fig. 25) or absent (Fig. 20, 24);
5. Elytra with whitish pubescence before the oblique whitish pubescent band as two small isolated spots (Fig. 25) or as a wide transverse band reaching the suture (Fig. 20, 24);
6. Dark band close to the inferior margin of the first whitish pubescent band or spots on the posterior half of the elytra small and elongate (Fig. 25), absent (Fig. 24), or large and almost reaching the suture (Fig. 20);
7. Dark pubescent band close to the inner apex of the oblique whitish pubescent band from absent to very distinct;
8. Centrobasal crest on the elytra from slightly elevated to distinctly elevated, with three or four tubercles dorsally.

Currently, *L. cristulatus* is formally known from Honduras, Nicaragua, Costa Rica, and Panama (Bezark 2023b; Monné 2023; Tavakilian and Chevillotte 2023). Although we have examined a photograph of a specimen from Mexico (Bezark 2023a) we are not formalizing the record.

**Material examined.** BELIZE, *Toledo*: BARC San Pedro Columbia, 15°16'43"N 88°57'49"W, on dead tree trunks at night, 1 female, 23.IX.2004, P.W. Kovarik leg. (FSCA).

### *Nealcidion lingafelteri* Santos-Silva and Botero, new species

(Fig. 26–31)

**Description. Holotype male** (Fig. 26–30). Integument mostly black; head capsule dark brown; ventral mouthparts dark brown, except palpomeres black with apices brown; anteclypeus brown with irregular dark-brown areas; anterior quarter of labrum brown; scape dark brown; pedicel and antennomeres III–V brown with dark-brown apex; antennomeres VI–XI orangish brown, gradually lighter toward XI, with apex darkened. Femoral



Figures 26–30. *Nealcidion lingafelteri* new species, holotype male. 26) Dorsal habitus; 27) Ventral habitus; 28) Lateral habitus; 29) Head, frontal view; 30) Elytral centrobasal crests.

peduncles partially dark reddish-brown. Tibiae dark brown basally, brown on remaining surface. Tarsomeres dark brown, lighter on basal  $\frac{2}{3}$  of meso- and metatarsomeres I. Apex of ventrites 1–4 dark reddish-brown.

**Head.** Frons abundantly, shallowly, minutely punctate; with abundant yellow pubescence partially obscuring integument laterally and centrally, pubescence sparser on remaining surface; with one long, erect dark-brown seta close to each eye. Area between antennal tubercles and upper eye lobes abundantly, shallowly, minutely punctate; with abundant yellow pubescence not obscuring integument, except smooth and glabrous median groove; remaining surface of vertex abundantly, shallowly, minutely punctate; with abundant yellow pubescence between eyes, this pubescence centrally projected toward prothorax, narrowed toward its apex, except glabrous median groove; remaining surface subglabrous. Area behind upper eye lobes with dense yellow pubescence close to eyes, this area widened from middle; with oblique, wide dark-brown pubescent band from yellow pubescence to prothorax; remaining surface almost glabrous. Area behind lower eye lobes with dense yellow pubescence, except elongated area with minute and sparser pubescence located on middle of superior region. Genae abundantly, shallowly, minutely punctate, except smooth apex; with abundant yellow pubescence partially obscuring integument, pubescence slightly sparser close to frons and clypeus, except glabrous, inverted V-shaped area frontally close to glabrous smooth apex. Antennal tubercles with abundant yellow pubescence (pubescence partially lost frontally and dorsally). Wide central area of postclypeus with moderately sparse pale-yellow pubescence; with one long, erect dark-brown seta on each side. Sides of postclypeus glabrous. Labrum sparsely, finely punctate on posterior half, smooth on anterior half; posterior half with a few short, decumbent, yellowish-white setae and a few long, erect dark-brown setae; anterior half glabrous, except short fringe of yellowish-brown setae on anterior margin. Gulamentum smooth glabrous, except intermaxillary process abundantly, finely punctate, and moderately abundant yellowish-white pubescence not obscuring integument. Distance between upper eye lobes 0.20 times distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.51 times distance between outer margins of eyes. Antennae 2.0 times elytral length (missing apical region of XI), reaching elytral apex at apical third of antennomere VI. Scape slightly sinuous, strongly projected inward and backward apically; with abundant yellowish-white pubescence not obscuring integument (pubescence more pale-yellow depending on light intensity and lost in most dorsal and lateral areas), except dense, bristly, dark yellowish-brown pubescence on apical projection and yellow pubescence on apex of dorsal and lateral surfaces; with a few long, erect dark-brown setae ventrally. Pedicel with abundant pale-yellow pubescence not obscuring integument, except brown pubescence on posterior  $\frac{2}{3}$  of dorsal surface; with a few long, erect brown setae ventrally. Antennomere III with abundant pale-yellow pubescence (apparently, lost on part of surface), except dark apical region with abundant brownish pubescence not obscuring integument dorsally and laterally and apex of ventral surface with abundant bristly yellowish-brown setae; with moderately abundant and long, erect brown setae ventrally. Antennomere IV with abundant yellowish-white pubescence not obscuring integument, except apex of dorsal and lateral surfaces with brownish pubescence and apex of ventral surface with abundant bristly yellowish-brown setae; with moderately sparse and long, erect brown setae ventrally. Antennomeres V–VII with abundant yellowish-white pubescence partially obscuring integument on light area and sparser yellowish-white pubescence on dark area; V with sparse and long, erect brown setae ventrally. Antennomeres VIII–XI with abundant yellowish-white pubescence partially obscuring integument. Antennal formula (ratio) based on length of antennomere III: scape = 0.74; pedicel = 0.09; IV = 0.77; V = 0.54; VI = 0.45; VII = 0.43; VIII = 0.41; IX = 0.38; X = 0.37; XI = 0.17 (broken).

**Thorax.** Prothorax wider than long; with large, rounded protuberance on middle of central region. Pronotum with moderately large, elevated tubercle on each side of anterior half, obliquely truncate apically, and elongated, slightly elevated gibbosity centrally from anterior third to apical sixth; laterally with dense yellow pubescence, with irregular, both small and large areas with dark-brown pubescence interspersed; wide central area with sparse pale-yellow pubescence (apparently, most of pubescence was lost), except glabrous anterolateral tubercles and central gibbosity. Sides of prothorax with dense yellow pubescence close to prothorax, except irregular, large dark-brown pubescent macula on anterior third, and abundant yellowish pubescence not obscuring integument toward prosternum. Prosternum with abundant yellowish-white pubescence not obscuring integument, except almost glabrous area close to anterior margin. Prosternal process with abundant yellowish-white pubescence not obscuring integument on basal half, pubescence denser on apical half; narrowest area 0.14



times procoxal width. Mesoventrite with abundant yellowish pubescence not obscuring integument, pubescence denser basally and centrally, except apex of sides with dense yellow pubescence. Mesanepisterna with abundant yellow pubescence partially obscuring integument, except glabrous, irregular areas interspersed. Mesepimera with abundant yellow pubescence partially obscuring integument. Mesoventral process with abundant yellowish pubescence not obscuring integument; apex 0.36 times mesocoxal width. Metanepisterna with abundant yellow pubescence not obscuring integument. Sides of metaventrite with dense yellow pubescence; remaining surface with very sparse yellowish pubescence, except denser pubescence apically. Scutellum with yellow pubescence not obscuring integument, pubescence more yellowish-white apically and apparently partially lost. **Elytra.** Centrobasal crest short, elevated, obliquely truncate and asperate-punctate dorsally; humeral carina slightly marked from humerus to apical sixth; dorsal surface with two slightly distinct longitudinal carinae, innermost starting on centrobasal crest, outermost starting on base between centrobasal crest and humerus, both subfused apically with humeral carina; abundantly, coarsely punctate on anterior half, punctures finer and sparser on posterior half; sides slightly, gradually convergent from humerus to posterior quarter, then more distinctly narrowed toward apex; apex oblique, slightly concave, with outer apex triangularly projected; with abundant yellowish pubescence not obscuring integument, with spots with brownish sparse pubescence interspersed, except: dense yellow pubescence between humeral carina and epipleural margin, except glabrous spots interspersed close to epipleural margin; irregular, dense yellow pubescence on sides of anterior third, reaching and surrounding centrobasal crest, except its anterior margin, with irregular dark-brown pubescent maculae interspersed; dense, arched yellow pubescent band about middle, from humeral carina to after central region of dorsal surface; large blackish pubescent macula close to arched yellow pubescent band, from humeral carina to after central region of dorsal surface; large, somewhat irregular blackish pubescent macula on posterior third, surrounded by dense yellow pubescence, dense yellow pubescence with spots with sparse brown pubescence interspersed, especially anteriorly; and oblique, blackish pubescent band near to outer margin of posterior blackish pubescent macula. **Legs.** Femora with dense yellowish pubescence, yellower depending on light intensity, except brownish pubescent macula on dorsal surface of femoral club; profemora with sparse, small, rounded tubercles on ventral surface of femoral club (Fig. 29). Protibiae with small, rounded tubercles on margin of ventral surface, larger on inner margin; basal third of dorsal and lateral surfaces with sparse yellowish-white pubescence, central region with dense, wide yellowish-white pubescence dorsally and laterally, basal third of ventral surface almost glabrous and remaining ventral surface with dense, bristly yellowish-brown pubescence, dorsal and lateral surfaces with sparse brownish pubescence dorsally and laterally close to dense yellowish-white central pubescence, dorsal and inner surface of apical region with abundant yellowish-white pubescence not obscuring integument, and apical region of outer surface with dense, bristly yellowish-brown pubescence. Meso- and metatibiae with dense yellowish-white pubescence on dorsal base, sparse yellowish-white pubescence on base of lateral surface and ventral surfaces, remaining basal third with sparse brownish pubescence, remaining basal half with dense yellowish-white pubescence and apical half with dense, bristly yellowish-brown pubescence, slightly sparser close to dense yellowish-white pubescence, except on dorsal surface of mesotibia. Dorsal surface of tarsomeres mostly with yellowish-white pubescence; metatarsomere I longer than II–III together.

**Abdomen.** Ventrites with abundant yellow pubescence, denser laterally on sides of ventrites 1–4 and sides of posterior  $\frac{2}{3}$  of ventrite 5, except glabrous apex of ventrites 1–4. Apical margin of ventrite 5 widely concave.

**Female** (Fig. 31). Similar to male, differing by shorter antennae, 1.8 times elytral length, and femoral clubs slender. Note: The general pubescence in the paratype female is better conserved, and it does not have the oblique blackish pubescent band on posterior near the outer margin of the posterior blackish pubescent macula.

**Dimensions in mm.** Holotype male: Total length, 14.15; prothoracic length, 2.15; anterior prothoracic width, 2.30; posterior prothoracic width, 2.80; maximum prothoracic width, 3.15; humeral width, 4.60; elytral length, 10.60. Paratypes female/male: Total length, 13.00/10.00.

**Type material.** Holotype male from COSTA RICA, *Puntarenas*: Monteverde Biol. Sta., 20–25.V.1993, S.W. Lingafelter leg. (USNM). Paratype female from COSTA RICA, *Puntarenas*: Monteverde Cloud Forest Biological Preserve, 10°18.072'N – 84°47.897'W, 1575 m, 22.V.2019, MV/UV light, S.W. Lingafelter leg. (SWLC); Paratype male from COSTA RICA, *Puntarenas*: Monteverde Biol. Sta., 4–9 January, 1989, F.T. Hovore leg. (LGBC).

**Etymology.** The new species is dedicated to Steven W. Lingafelter (SWLC), collector of the type series, for his valuable contribution to the knowledge of the Cerambycidae.

**Remarks.** *Nealcidion lingafelteri* new species belongs to the group of species with narrow and elongate body (e.g. *N. elongatum* Monné, 1998 and *N. napoense* Nascimento and McClarin, 2018 - see photographs on Bezark 2023a and original descriptions). Among the species of this group, it is more similar to *N. napoense*, but differs by pronotum with elevated anterolateral tubercles (almost absent in *N. napoense*), centrobasal crest of the elytra without erect setae dorsally (present in *N. napoense*), and different elytral pubescent pattern, which includes large maculae with blackish pubescence (without large blackish pubescent maculae in *N. napoense*).

### ***Nealcidion napoense* Nascimento and McClarin, 2018**

*Nealcidion napoensis* Nascimento and McClarin 2018: 385.

**Remarks.** *Nealcidion* Monné, 1977 is neuter gender (-idion is a diminutive Greek neuter suffix). Therefore, the species-group name “napoensis” (masculine or feminine) needs to be changed to “napoense” (neuter).

CALLIINI Thomson, 1864

### ***Colombicallia curta* Galileo and Martins, 1992**

(Fig. 32)

*Colombicallia curta* Galileo and Martins 1992: 138.

**Remarks.** This species was described based on one male and two females from Colombia (Magdalena) and remains known only from this country.

**Material examined.** PANAMA (**new country record**), *Colon*: vic. Palenque, 5 females, 17.II.1999, J.E. Wappes leg. (4 females, FSCA; 1 female, MZSP).

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**Figures 31–32.** Lamiinae spp. **31)** *Nealcidion lingafelteri* new species, paratype female, by Steven W. Lingafelter. **32)** *Colombicallia curta* Galileo and Martins, 1992, female from Panama, dorsal habitus.

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