

ARTICLE

New species and new geographical records in South American Piezocerini (Coleoptera: Cerambycidae) with revised keys to species of *Alienosternus* and *Hemilissa*

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Abstract

Six new species of Piezocerini (Coleoptera: Cerambycidae: Cerambycinae) are described: *Alienosternus sanjacintero*, *Hemilissa bifasciata*, *Hemilissa erikae*, *Hemilissa claudiae*, and *Migorybia santossilvai* from Colombia and *Alienosternus wappesi* from Bolivia. The genus *Alienosternus* Martins, 1976 is recorded for the first time for Colombia and Bolivia, and the genus *Migorybia* Martins, 1985 is recorded for the first time for Colombia. The geographical distribution of three species is expanded, and keys to species of *Alienosternus* and *Hemilissa* Pascoe, 1858 are provided.

Introduction

The tribe Piezocerini (Coleoptera: Cerambycidae: Cerambycinae) is currently composed of 19 genera and 115 species, distributed mainly in South America with a few species in North and Central America (including the Caribbean) (Monné 2019; Tavakilian and Chevillotte 2019). This tribe is well defined and homogenous and is characterised by having the basal antennomeres bicarinate, with the carinae distinct and evident (Martins 2003).

Martins (1976) divided Piezocerini into two subtribes: Piezocerina and Haruspicina. Currently, there are four genera of Piezocerina in Colombia (*Gorybia* Pascoe, 1866; *Hemilissa* Pascoe, 1858, *Piezasteria* Martins, 1976, and *Piezocera* Audinet-Serville, 1834) with a total of six species (Botero 2018); and six genera in Bolivia (*Gorybia*; *Hemilissa*; *Pharcidodes* Martins, 1976; *Piezarina* Martins, 1976; *Piezasteria*; *Piezocera*; and *Thyellocerus* Martins, 1976) with a total of 29 species (Monné 2019; Tavakilian and Chevillotte 2019).

The genus *Alienosternus* Martins, 1976 was proposed when Piezocerini was divided into subtribes to bring together the species with well-developed upper eye lobes, densely punctate elytra, open procoxal cavities, elongate metatarsomere V, and females with apical antennomeres decreasing in length (Martins 1976). *Alienosternus* is currently composed of four species with their geographical distribution restricted to South America (Brazil and Argentina) (Tavakilian and Chevillotte 2019).

The genus *Hemilissa* was described for *Acanthoptera gummosa* Perty, 1832. This genus is similar to *Gorybia*, but differs by the wider basal flagellomeres, expanded to the external margin, cylindrical prothorax, and protibiae flattened (Martins 2003). Currently, *Hemilissa* contains

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11 species from Central and South America, with three of them known to occur in Colombia: *Hemilissa cornuta* Bates, 1870; *H. opaca* Martins, 1976; and *H. sulcicollis* Bates, 1870 (Botero 2018; Tavakilian and Chevillotte 2019).

Migorybia Martins, 1985 is a monotypic genus, characterised by having open anterior coxal cavities, antennae of males as long as the body, antennomere III linear, pronotum without tubercles, sternal processes as long as the respective coxa, and elytral apex with an external spine (Martins 2003). This genus is currently only recorded from Venezuela (Tavakilian and Chevillotte 2019).

In this work, two species of *Alienosternus*, three species of *Hemilissa*, and one species of *Migorybia* are described and illustrated. Additionally, the geographical distribution for three Piezocerini species is expanded. The key to *Alienosternus* by Martins (2003), and to *Hemilissa* by Galileo *et al.* (2016) are translated and modified to include the new species.

Material and methods

Most of the specimens were collected in Colombia, from February to June 2018, in fragments of tropical dry forest in the departments Atlántico (Reserva Campesina la Montaña) and Bolívar (Reserva La Flecha). This sampling was supplemented by other material located in entomological collections from the following institutions (with the curator/collection manager in brackets).

ACMT – American Coleoptera Museum (James Wappes personal collection), San Antonio, Texas, United States of America.

CTNI – Colección Taxonómica Nacional de insectos “Luis María Murillo,” Corporación Colombiana de Investigación Agropecuaria, Mosquera, Colombia (Erika Valentina Vergara-Navarro).

FSCA – Florida State Collection of Arthropods, Gainesville, Florida, United States of America (Paul E. Skelley).

IAVH – Instituto de Investigaciones de Recursos Biológicos “Alexander von Humboldt,” Villa de Leyva, Colombia (Jhon Cesar Neita).

MPUJ – Museo Javeriano de Historia Natural “Lorenzo Uribe, S.J.,” Pontificia Universidad Javeriana, Bogotá, Colombia (Igor Dimitri Forero, Giovanni Fagua).

MZSP – Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (Sônia Casari).

UARC – Universidad del Atlántico, Puerto Colombia, Colombia (Neis José Martínez).

UNAB – Facultad de Agronomía, Universidad Nacional de Colombia, Bogotá, Colombia (Francisco Serna, Erika Valentina Vergara-Navarro).

All newly collected specimens were deposited in the Museo Javeriano de Historia Natural “Lorenzo Uribe, S.J.” collection and in Florida State Collection of Arthropods (holotypes) and in the Universidad del Atlántico and Museu de Zoologia, Universidade de São Paulo collections (paratypes). For more details, see “Type material” in each species treatment. The specimens were identified by the authors, following Martins (2003) key to Piezocerini species, by consulting the original descriptions and by comparison with the specimens of the Museu de Zoologia, Universidade de São Paulo Cerambycidae collection.

Photographs were taken in the Museu de Zoologia, Universidade de São Paulo with a Canon (Tokyo, Japan) EOS Rebel T3i DSLR camera, Canon MP-E 65 mm f/2.8 1–5X macro lens, controlled by an image stacking software. Measurements were taken in mm using a measuring ocular Hensoldt (Wetzlar, Germany) Mess 10 in the Leica (Wetzlar, Germany) MZ6 stereomicroscope, also used in the study of the specimens. The terminology used herein for morphological structures follows Lawrence *et al.* (2010). The references and geographical distribution were based on the Monné (2019) and Tavakilian and Chevillotte (2019) catalogues.

***Alienosternus sanjacintero* García, Botero, and Martínez, new species**

<http://zoobank.org/urn:lsid:zoobank.org:act:0C37E5B5-B22A-4D7A-B43A-F59E092AC943>.

Figures 1–4.

Type material

Holotype female. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), 15–16.iv.2018, K. García, "Trampa de luz blanca," MPUJ_ENT 0064075 (MPUJ). *Paratype*. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), one female; 15–16.iv.2018, K. García, "Trampa de luz blanca" (UARC).

Diagnosis

The species is distinguished from other species in the genus by having light brown integument; lateral carina on elytra, from humerus to posterior fifth; elytral apex emarginate, with spine on outer angle, and rounded on sutural angle.

Description

Female. Integument mostly light brown. Head dorsally, pronotum, scape, pedicel and basal antennomeres darker, ventrites lighter.

Head. Dorsally entirely reticulate; with short, sparse setae. Frons with moderately long, sparse setae. Central area between antennal tubercles with longitudinal sulcus between antennal tubercle and median groove. Antennal tubercles projected, rounded at apex. Median groove distinct from near clypeus to posterior level of antennal tubercles. Gula mentum smooth. Mandibles with long, sparse setae on outer surface. Distance between upper eye lobes three times width of an upper eye lobe. Antennae ending at apical fourth of elytra. Scape coarsely reticulate; with moderately long, sparse setae. Antennal formula (ratio) based on length of antennomere III: scape = 0.77; pedicel = 0.15; IV = 0.96; V = 0.96; VI = 0.77; VII = 0.77; VIII = 0.58; IX = 0.58; X = 0.46; XI = 0.69.

Thorax. Prothorax subquadrate; basal quarter deeply constricted; sides rounded. Pronotum coarsely alveolate; with long, thick, sparse setae throughout, with short, sparse setae interspersed; posterior region depressed. Sides of prothorax with sculpture and setae as on pronotum. Prosternum microsculptured; with long, sparse setae, with minute setae interspersed. Prosternal process with sides subparallel, slightly narrowed at middle, slightly expanded at apex, posterior margin emarginate, transversely sulcate and flat at apex; width at narrowest point about 1/4 of procoxal cavity width. Mesoventrite tumid, microsculptured, with moderately long, sparse setae, especially centrally. Mesoventral process, at narrowest point, about half of mesocoxal cavity width, sides convergent towards apex, deeply emarginate at apex. Metenepisternum with short, abundant setae. Metaventrite glabrous and smooth centrally, anterior half densely microsculptured laterally, with long, sparse setae (more so laterally) in anterior half and along posterior margin. Scutellum glabrous, posterior margin widely rounded. Elytra coarsely, deeply, abundantly punctate on basal half, gradually finely and shallowly punctate towards apex; with long, sparse setae throughout; with lateral carina, from humerus to posterior fifth; apex emarginate, with outer angle spiniform, rounded at sutural angle. Legs with long sparse setae; femoral peduncle longitudinally sulcate ventrally and dorsally. Tibiae distinctly carinate.

Abdomen. Ventrites slightly microsculptured, with sparse, long, and short setae; ventrite I slightly shorter than II–III together; apex of ventrite V subtruncate.

Measurements. Holotype, female, total length: 7.4 mm, prothorax length: 1.5 mm, prothorax width at widest point: 1.5 mm, elytral length: 5.2 mm, humeral width: 1.7 mm. Paratype, female,



Figs. 1–8. 1–4, *Alienosternus sanjacintero* new species, holotype, female: 1, dorsal view; 2, ventral view; 3, lateral view; 4, details of head, frontal view. 5–8, *Alienosternus wappesi* new species, holotype, female: 5, details of head, frontal view; 6, dorsal view; 7, ventral view; 8, lateral view.

total length: 7.4 mm, prothorax length: 1.5 mm, prothorax width at widest point: 1.5 mm, elytral length: 5.1 mm, humeral width: 1.8 mm.

Etymology

The epithet, *sanjacintero*, is a demonym alluding to the inhabitants of the municipality of San Jacinto, in Colombia, the locality where the specimen was collected. The name should be treated as a noun in apposition.

Remarks

Alienosternus sanjacintero differs from *A. metallicus* Martins, 1976 by its general light brown colour (head and prothorax reddish orange, elytra green, and antennae and legs brown in *A. metallicus*). It differs from *A. solitarius* (Gounelle, 1909) by the elytra with lateral carina, from humerus to posterior fifth, and elytral apex emarginate, with outer angle spinose and sutural angle rounded (the elytra lack lateral carina and the elytral apex is unarmed and truncate in *A. solitarius*). The new species differs from *A. simplex* Martins, 1976 by the prosternal process not laminiform (width at narrowest point about 1/4 of procoxal cavity width), and elytral apex emarginate and with outer angle spinose (the prosternal process is laminiform and the elytral apex is truncate and unarmed in *A. simplex*). Finally, *Alienosternus sanjacintero* differs from *A. cristatus* (Zajciw, 1970) by the elytral carina distinct from humerus to posterior fifth; the mesoventral process, at narrowest point, about half of mesocoxal cavity width; and the elytral apex with outer angle armed (the lateral elytral carina is shorter, from humerus to anterior third; mesoventral process is wider than mesocoxal cavity width; and the elytral apex is unarmed in *A. cristatus*). According to Tavakilian and Chevillotte (2019), *Alienosternus* is known from Brazil and Argentina; therefore, we first record this genus in Colombia.

Alienosternus wappesi García, Botero, and Martínez, new species

<http://zoobank.org/urn:lsid:zoobank.org:act:B6ACC9CD-4CD8-4843-89D1-70E5A1B46C0C>.

Figures 5–8.

Type material

Holotype female. BOLIVIA, Santa Cruz: Reserva Natural Potrerillo del Guenda, (Snake Farm, 400 m, 17°40'15"S, 63°27'26"W), 2–3.x.2013, Wappes and Skillman (FSCA).

Diagnosis

This species can be distinguished from other species in the genus by the pronotum scabrous and microsculptured, with indistinct alveolus; surface of prosternum microsculptured and sub-rugose; prosternal process microsculptured, about half procoxal cavity width; elytral apex unarmed.

Description

Female. Integument dorsally dark brown. Head, basal antennomeres, pronotum, base and apex of femora, and tibiae darker; ventrites lighter.

Head. Dorsally entirely reticulate, microsculptured, and glabrous. Frons reticulate, microsculptured and with short, sparse setae, lacking median groove. Antennal tubercles weakly elevated, apex rounded. Anterior area of the gulamentum depressed, finely, transversely striate. Mandibles with long, sparse setae on base of outer surface. Distance between upper eye lobes six times width of one upper eye lobe. Antennae reaching elytral apex at antennomere XI.

Antennomeres III–IV filiform, antennomeres V–X serrate, more so towards apical antennomeres, antennomere XI subglobose. Scape subalveolate, scabrous; with sparse setae on outer side. Antennal formula (ratio) based on length of antennomere III: scape = 0.71; pedicel = 0.21; IV = 1.00; V = 1.00; VI = 0.88; VII = 0.71; VIII = 0.58; IX = 0.54; X = 0.54; XI = 0.67.

Thorax. Prothorax subquadrate; sides rounded, posterior quarter distinctly constricted. Pronotum coarsely scabrous, with moderately long, erect, gold setae. Sides of prothorax with sculpture and setae as on pronotum. Prosternum microsculptured, subrugose, with moderately long, sparse setae. Prosternal process narrowed at middle and expanded laterally at apex; width at narrowest point about half of procoxal cavity width. Mesoventrite scabrous, with short, sparse setae. Mesoventral process wider than mesocoxal cavity width. Metanepisternum glabrous. Scutellum glabrous, with posterior margin rounded. Elytra coarsely, deeply, abundantly punctate in basal half, sparser and finer in posterior fourth; with moderately long, sparse setae throughout; apex unarmed, truncate. Legs with sparse, long setae, denser on apical half of ventral surface of tibiae. Femoral peduncle longitudinally sulcate ventrally and dorsally. Tibiae distinctly carinate.

Abdomen. Ventrites microsculptured laterally; with fine, shallow, sparse punctures, and short setae interspersed with long setae; ventrite I about as long as ventrites II–III together; apex of ventrite V rounded.

Measurements. Holotype, female, total length: 7.4 mm, prothorax length: 1.7 mm, prothorax width at widest point: 1.7 mm, elytral length: 5.2 mm, humeral width: 2.1 mm.

Etymology

Named for James Wappes (ACMT), one of the collectors of the holotype who kindly provided the specimen for study.

Remarks

Alienosternus wappesi is similar to *A. solitarius* by the surface of pronotum scabrous, not forming alveolus; the other species of the genus have the surface of pronotum clearly alveolate. The new species differs from *A. solitarius* by the surface of prosternum and prosternal process microsculptured, subrugose, and the prosternal process wider (width at narrowest point about half of procoxal cavity width). In *A. solitarius*, the surface of prosternum is only microsculptured laterally, prosternal process is smooth and narrower (width at narrowest point about 1/4 of procoxal cavity width). According to Tavakilian and Chevillotte (2019), *Alienosternus* is from Brazil and Argentina; therefore, we first record this genus in Bolivia.

Key to *Alienosternus* adults

According to the most recent key to *Alienosternus* species (Martins 2003), the new species can be inserted as follows (translated and modified).

-
1. Head and prothorax reddish orange; elytra metallic green; antennae and legs black. Brazil (Rondônia, Mato Grosso) *Alienosternus metallicus* Martins, 1976
 - Overall colour brown to brownish red 2
 2. Elytra with lateral carina from humerus to posterior fifth; elytral apex emarginate, with outer angle spiniform and rounded at sutural angle (Figs. 1–4). Colombia (Bolívar)
 - *Alienosternus sanjacintero* García, Botero, and Martínez, new species
 - Elytra without lateral carina or with lateral carina restricted to anterior half, elytral apex truncate, and unarmed 3

3. Pronotum scabrous, microsculptured, with indistinct alveolus and a few granules; males with prosternal process elevated at centre and mesoventral process laterally elevated, ridged at centre, without setae in those elevations (males of *A. wappesi* unknown) 4
 - Pronotum with alveolus and granules, sternal processes of males without modifications or with modifications different 5
 4. Surface of prosternum and prosternal process microsculptured, subrugose; prosternal process wider (width at narrowest point about half of procoxal cavity width) (Figs. 5–8). Bolivia (Santa Cruz) ***Alienosternus wappesi* García, Botero, and Martínez, new species**
 - Surface of prosternum only microsculptured laterally; prosternal process smooth, and narrower (about 1/4 of procoxal cavity width). Brazil (Mato Grosso, Goiás, Maranhão, Minas Gerais, Bahia) ***Alienosternus solitarius* (Gounelle, 1909)**
 5. Antennae of males without sexual pilosity; males with posterior half of prosternum with transverse row of setae. Females with wide prosternal process, not narrowed between the procoxae. Brazil (Mato Grosso, Mato Grosso do Sul, Goiás, Maranhão, Alagoas, Sergipe, Piauí, Bahia, Minas Gerais) ***Alienosternus cristatus* (Zajciw, 1970)**
 - Antennae of males with sexual pilosity; males with sternal processes without row of setae. Females with prosternal process laminiform between the coxae. Argentina (Salta, La Rioja, San Juan) ***Alienosternus simplex* Martins, 1976.**
-

***Hemilissa bifasciata* García, Botero, and Martínez, new species**

<http://zoobank.org/urn:lsid:zoobank.org:act:254A9C1E-02F0-45A9-9B2F-1E7E7AFB1EAF>.
 Figures 9–13.

Type material

Holotype female. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), 14–16.iv.2018, K. García, “captura manual,” MPUJ_ENT 0064076 (MPUJ). *Paratypes*. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), 15.IV.2018, K. García, “perturbación de follaje,” one female (UARC); one male, San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), 15.iv.2018, K. García “captura manual,” one male (MZSP).

Diagnosis

This species can be distinguished from other species in the genus by lacking distinct pronotal tubercles; central area of the pronotum with contrasting sculpture and longitudinal depression; prothorax parallel-sided; elytra shiny, bicolorous, with longitudinal yellowish-red band on each elytron.

Description

Female. Integument mostly reddish brown; pronotum with dark brown areas; femoral club slightly darker; elytra dark brown with longitudinal yellowish-red band.

Head. Frons coarsely, densely, shallowly punctate; with short, sparse, gold setae. Vertex coarsely, abundantly punctate; glabrous. Antennal tubercles slightly elevated, rounded at apex. Median groove distinct from near midlength of frons to posterior level of antennal tubercles. Gulae finely, transversely striate. Mandibles with long, sparse setae on outer surface. Distance between upper eye lobes 3.4 times width of one upper eye lobe. Antennae reaching elytral apex at antennomere XI. Scape coarsely, densely, shallowly punctate throughout; with medium to long, sparse yellow setae. Antennal formula (ratio) based on length of antennomere III (only the



Figs. 9–17. 9–13, *Hemilissa bifasciata* new species, female: 9, dorsal view, holotype; 10, ventral view, holotype; 11, lateral view, holotype; 12, dorsal view, paratype; 13, details of head, frontal view, holotype. 14–17, *Hemilissa erikae* new species, holotype, female: 14, detail of head, frontal view; 15, dorsal view; 16, ventral view; 17, lateral view.

holotype measured): scape = 0.67; pedicel = 0.16; IV = 0.97; V = 0.95; VI = 0.81; VII = 0.76; VIII = 0.65; IX = 0.62; X = 0.54; XI = 0.76.

Thorax. Prothorax slightly longitudinal, about 1.2 times longer than largest width; anteriorly slightly constricted ahead margin; posteriorly distinctly constricted. Pronotum coarsely alveolate, except for anterior and posterior margin and longitudinal median sulcus; with long, sparse yellow setae except on median sulcus. Anterior half of prosternum finely transversely striate, with sparse fine punctures and sparse, short setae. Posterior half of prosternum coarsely, densely, confluent

punctate; with sparse, short setae. Prosternal process elevated, flat, and expanded laterally at apex, width at narrowest point equal to 1/4 of procoxal cavity width. Mesoventrite depressed around internal margin of coxal cavities; coarsely, densely, shallowly, confluent punctate, smoother laterally, glabrous. Mesoventral process slightly narrower than mesocoxal cavities, emarginate at apex. Metanepisternum with abundant, short setae. Metaventricle with sparse short setae laterally on anterior half, except for glabrous central area; coarsely, shallowly punctate near mesocoxal cavities, with sparse, fine punctures on remaining surface, except for smooth central area. Scutellum truncate at apex. Elytra coarsely, deeply, abundantly punctate on basal half, gradually more finely punctate towards apex; with sparse, long setae throughout; apex with two long spines, innermost slightly shorter than outermost which is at least three times longer than pedicel. Legs with femoral peduncle longitudinally sulcate. Tibiae distinctly carinate.

Abdomen. Ventrites with long and short setae; ventrite I, without central projection, about as long as ventrites II–III together; apex of ventrite V broadly rounded.

Measurements. Holotype, female, total length: 8.2 mm, prothorax length: 1.7 mm, prothorax width at widest point: 1.4 mm, elytral length: 5.7 mm, humeral width: 1.9 mm. Paratypes, male/female, total length: 7.0/7.6 mm, prothorax length: 1.5/1.5 mm, prothorax width at widest point: 1.2/1.3 mm, elytral length: 4.7/5.4 mm, humeral width: 1.6/1.7 mm.

Variation

The longitudinal yellowish-red bands may vary in width, occupying almost all surface of elytra (Fig. 12) or reduced to narrow band (Fig. 9).

Etymology

Latin, “*fascia*” = band, and “*bi*” = two; “*bifasciata*,” referring to the two longitudinal yellowish-red elytral fascia. This name is an adjective in the nominative singular.

Remarks

Hemilissa bifasciata is similar to *H. sulcicollis* Bates, 1870, *H. undulaticollis* Zajciw, 1960, and *Hemilissa erikae* **new species** by the pronotum without tubercles; the visible, longitudinal, glabrous sulcus; and shiny elytra. It differs from them by the bicolorous elytra, with longitudinal, yellowish-red band; and by the bispinose elytral apex, with both spines long, the external spine at least three times longer than pedicel. In *H. sulcicollis*, *H. undulaticollis*, and *H. erikae* the elytra are unicolorous, and elytral apex has a long outer spine with a small toothed inner projection (*H. sulcicollis*, *H. undulaticollis*) or both spines equal in size but shorter than 1.5 times the length of the pedicel (*H. erikae*). *Hemilissa bifasciata* differs from *H. undulaticollis* by the elytra microsculptured in anterior half (in *H. undulaticollis* the elytra are entirely not microsculptured). The new species also differs from *H. catapotia* Martins, 1976 by the pronotum with distinct glabrous, longitudinal sulcus, and bicolorous elytra with the apices bispinose. In *H. catapotia*, the pronotum lacks a longitudinal sulcus, elytra are unicolorous, and elytral apex is unispinose, with an outer spine and a small projection at sutural angle.

Hemilissa erikae García, Botero, and Martínez, new species

<http://zoobank.org/urn:lsid:zoobank.org:act:825C45DA-A70F-472C-B3FC-6EE5BE568811>.

Figures 14–17.

Type material

Holotype female. COLOMBIA, Bolívar: San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), 15–16.iv.2018, K. García, “trampa de luz UV,” MPUJ_ENT 0064077 (MPUJ).

Paratypes. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 09°51'12.4"N, 75°10'41.4"W), one male, 27.iv.2017, I. Mendoza, "trampa de luz" (UARC). *Cesar*: Codazzi (Corporación Colombiana de Investigación Agropecuaria, 10°43'38.6"N 74°13'27.5"W), one male, five females, 18.iv.1978, J. Jenkins, "atraídos por luz" (one male, three females in ICTN and two females in MZSP). *Cundinamarca*: Utica (Vereda El Curapo, Hacienda Versalles, 499 m, 5°11'47"N 74°29'36"W), 2.v.2010, P. García, one female (UNAB).

Diagnosis

This species can be distinguished from other species in the genus by the pronotum without tubercles; centre of pronotum sculptured, with longitudinal depression; elytra shiny, unicolorous; apex of elytra bispinose, with short spines.

Description

Female. Integument dark reddish brown; antennae and legs slightly lighter.

Head. Frons coarsely, densely, shallowly punctate; with short, sparse, gold setae, and longer setae along frontoclypeal suture. Vertex coarsely, abundantly punctate, with short, sparse, gold setae. Antennal tubercles slightly elevated, rounded at apex. Median groove distinct from near midlength of frons to posterior level of antennal tubercles. Gulamentum microsculptured, with long and short, gold setae. Mandibles with long, sparse setae on outer surface. Distance between upper eye lobes 4.6 times width of one upper eye lobe. Antennae not reaching elytral apex. Scape coarsely, densely, shallowly punctate throughout; with short and long, sparse, yellow setae. Antennal formula (ratio) based on length of antennomere III (only the holotype measured): scape = 0.68; pedicel = 0.18; IV = 0.95; V = 0.88; VI = 0.78; VII = 0.75; VIII = 0.60; IX = 0.63; X = 0.53; XI = 0.70.

Thorax. Prothorax distinctly longer than wide; distinctly constricted at posterior one-fifth. Pronotum coarsely alveolate, except anterior and posterior margin and longitudinal median sulcus in posterior half; with both short and slightly longer, sparse, yellow setae except on median sulcus. Anterior half of prosternum microsculptured and finely transversely striate; with short, sparse setae. Posterior half of prosternum coarsely, densely, confluent punctate; with short, sparse setae. Prosternal process narrowed at midlength, expanded laterally at apex, width at narrowest point equal to 1/3 of procoxal cavity width. Mesoventrite coarsely, densely, shallowly, confluent punctate laterally, sparser centrally; with short, gold setae. Mesoventral process with sides parallel, slightly narrower than mesocoxal cavities, deeply emarginate at apex. Metepisterna with dense short setae. Metaventrite with short, sparse setae laterally on anterior half, and with sparse long setae centrally; coarsely, shallowly punctate near mesocoxal cavities, with sparse fine punctures on remaining surface, except for smooth central area. Scutellum rounded at apex. Elytra coarsely, deeply, moderately punctate on basal half, gradually more finely punctate towards apex; with sparse, long setae arranged in five longitudinal rows; apex emarginate, with two spines, subequal in length, slightly longer than pedicel. Legs with femoral peduncle longitudinally sulcate. Tibiae distinctly carinate.

Abdomen. Ventrites microsculptured, mainly in anterior region, with short setae interspersed with sparse long setae; ventrite I about as long as ventrites II–III together; apex of ventrite V subrounded.

Measurements. Holotype, female, total length: 9.9 mm, prothorax length: 2.0 mm, prothorax width at widest point: 1.7 mm, elytral length: 6.8 mm, humeral width: 2.4 mm. Paratypes, male ($n = 2$)/female ($n = 6$): total length: 8.4–9.8/10.06 \pm 1.10 mm, prothorax length: 1.8–2.1/2.08 \pm 0.20 mm, prothorax width at widest point: 1.7–1.9/1.92 \pm 0.23 mm, elytral length: 5.7–6.6/7.05 \pm 0.73 mm, humeral width: 2.0–2.5/2.53 \pm 0.25 mm.

Males. Ventrite V is more transverse and the apex is truncate (versus subrounded in female).

Etymology

The specific name is in honour of Erika Valentina Vergara-Navarro (CTNI) for her kindness and help in providing access to CTNI and UNAB specimens needed for this and many other studies.

Remarks

Hemilissa erikae differs from other species of the genus by the following set of characters: pronotum without tubercles, disc with a longitudinal sulcus; elytra microsculptured on anterior half, remainder shiny; punctures on base of elytra not tuberculiform; elytral apices bispinose, with spines equal in size, and shorter than pedicel. See remarks in *H. bifasciata*.

Hemilissa claudiae García, Botero, and Martínez, new species

<http://zoobank.org/urn:lsid:zoobank.org:act:09AFDEE0-0EA0-4F7D-9C68-8197A655C0F8>.

Figures 18–22

Type material

Holotype male. COLOMBIA, Bolívar: Santuario de Fauna y Flora Los Colorados (Villa Roca, 180 m, 9°54'N 75°9'W, 180 m), 22.iv–7.v.2001, E. Deulufeut, “Malaise,” IAVH-E-209972 (IAVH).

Diagnosis

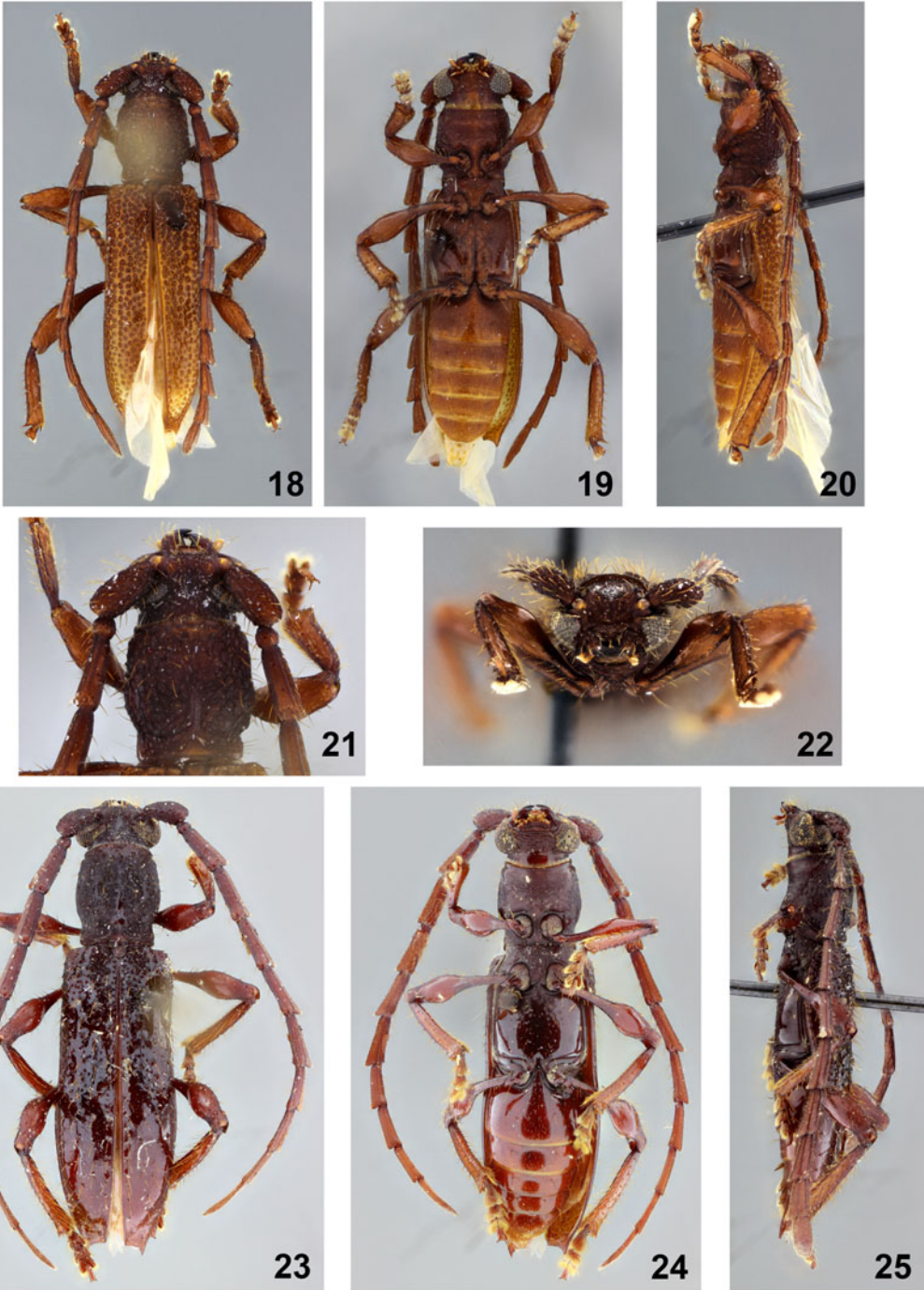
This species can be distinguished from other species in the genus by the pronotal tubercles; prothorax rounded, anteriorly and basally constricted; elytra light brown, coarsely punctate, sutural margin with toothed projection; femora slightly clavate.

Description

Male. Integument mostly brown; pronotum and head with dark brown areas; elytra and legs lighter brown.

Head. Frons and vertex coarsely, densely alveolate. Antennal tubercles distinctly elevated, acute at apex. Mandibles with long, sparse, golden setae on outer surface. Distance between upper eye lobes three times width of one upper eye lobe. Antennae reaching elytral apex at base of antennomere XI. Scape coarsely, densely, shallowly alveolate throughout; with long, sparse, golden setae. Antennal formula (ratio) based on length of antennomere III: scape = 0.97; pedicel = 0.23; IV = 1; V = 1; VI = 1; VII = 0.9; VIII = 0.74; IX = 0.77; X = 0.73; XI = 1.1.

Thorax. Prothorax about 1.2 times longer than largest width; anteriorly slightly constricted before margin; posteriorly distinctly constricted at posterior fifth. Pronotum coarsely alveolate, with median longitudinal sulcus, wider anteriorly; with long, randomly oriented, sparse, pale yellow setae at sides; with two small, barely evident, rounded tubercles on anterior half; and two prominent gibbosities in posterior half. Anterior half of prosternum with sparse punctures. Prosternal process flattened and expanded laterally at apex, width at narrowest point half of procoxal cavity width. Mesoventrite microsculptured, with coarse punctation laterally. Mesoventral process microsculptured, narrower than mesocoxal cavities, apex emarginate. Metanepisternum with sparse long setae. Metaventricle microsculptured; densely pubescent laterally; coarsely, shallowly punctate near mesocoxal cavities, with sparse fine punctures on remaining surface, except for smooth central area. Scutellum rounded at apex. Elytra coarsely, deeply, abundantly punctate; with five longitudinal rows of long setae on each elytron; apices emarginate with small, acute spine on outer margin and slightly dentate projection on sutural margin. Legs with tibiae distinctly carinate and flattened.



Figs. 18–25. 18–22, *Hemilissa claudiae* new species, holotype, male: 18, dorsal view; 19, ventral view; 20, lateral view; 21, details of head and pronotum, dorsal view; 22, details of head, frontal view. 23–25, *Hemilissa emblema* Martins, 1976, holotype, male: 23, dorsal view; 24, ventral view; 25, lateral view.

Abdomen. Ventrites with long and short setae; ventrite I about as long as ventrites II–III together; apex of ventrite V transverse and subrounded.

Measurements. Holotype, male, total length: 6.1 mm, prothorax length: 1.4 mm, prothorax width at widest point: 1.2 mm, elytral length: 4.1 mm, humeral width: 1.5 mm.

Etymology

The specific name is in honour of Claudia Martínez in recognition of her contributions to the knowledge of Colombian Cerambycidae and for her kind assistance to the second author when he first started his research on Cerambycidae.

Remarks

Hemilissa claudiae belongs to the group of species of the genera characterised by the tuberculate pronotum. These species are *H. fabulosa* Martins, 1985, *H. gummosa*, and *H. emblema* Martins, 1976. *Hemilissa claudiae* differs from *H. fabulosa* by the unicolorous elytra (in *H. fabulosa* the elytra have dark and white areas). The new species differs from *H. gummosa* by the prothorax rounded at sides, with anterior and basal constrictions, and the elytra without microsculpturing (in *H. gummosa*, the prothorax is subcylindrical, wider anteriorly, and the anterior half of the elytra is microsculptured). *Hemilissa claudiae* differs from *H. emblema* (Figs. 23–25) by the lighter integument, smaller size (total length = 6.1 mm), elytra without microsculpture, and femora slightly clavate. In *H. emblema*, the integument is dark brown, the size is larger (total length = 10.3 mm – holotype measured), and the femora are strongly clavate.

Key to *Hemilissa* adults

Modified and translated from Martins (2003).

-
1. Pronotum with well-defined (whether prominent or not) tubercles 2
 - Pronotum without well-defined tubercles 5
 2. Elytra yellowish brown with an irregular transverse white band anterior to the middle and a white spot on anterior third; apex of elytra with white area. Venezuela *Hemilissa fabulosa* Martins, 1985
 - Elytra unicolorous, reddish brown to blackish brown 3
 3. Prothorax subcylindrical, wider anteriorly; anterior half of elytra microsculptured. Brazil (Paraíba, Rio Grande do Sul, Goiás, Mato Grosso, Mato Grosso do Sul, Maranhão, Piauí, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul), Bolivia (Santa Cruz) Paraguay, Argentina (Misiones) *Hemilissa gummosa* (Perty, 1832)
 - Prothorax rounded at sides, with anterior and basal constrictions; microsculpture of elytra absent or nearly so around the scutellum 4
 4. Integument dark brown, total length greater than 10 mm, femora strongly clavate, sutural angle of elytra unarmed (Figs. 23–25). Venezuela, Bolivia (Santa Cruz) *Hemilissa emblema* Martins, 1976
 - Integument lighter, total length less than 7 mm, elytra without microsculpture, femora slightly clavate, sutural margin of elytra with toothed projection (Figs. 18–22). Colombia (Bolívar) *Hemilissa claudiae* García, Botero, and Martínez, new species

5. Elytra with matte finish and entirely microsculptured 6
 - Elytra shiny, either lacking microsculpture completely or only evident on anterior half 8
6. Pronotum with darker longitudinal wide medial band; sutural angle of elytra projected; antennal tubercles acutely, prominently projected. French Guiana, Colombia (Amazonas), Brazil (Amazonas, Pará, Rondônia, Goiás), Peru (Junín), Bolivia (Santa Cruz) ***Hemilissa cornuta* Bates, 1870**
 - Pronotum without contrasting band; sutural angle of elytra acute or spined; antennal tubercles not prominently projected 7
7. Elytra unicolorous; antennomere XI elongate and narrow. Colombia (Putumayo), Venezuela (Amazonas), Guyana, French Guiana, Brazil (Roraima, Amazonas, Pará, Maranhão) ***Hemilissa opaca* Martins, 1976**
 - Elytra with contrasting dark sutural band, which extends from the scutellum to the apical third; antennomere XI short and wide. Peru (Cuzco), Brazil (Amazonas, Goiás, Mato Grosso), Bolivia (Beni, Santa Cruz), Argentina (Tucumán, Santiago del Estero, Salta, Chaco, Formosa) ***Hemilissa quadrispinosa* Gounelle, 1913**
8. Pronotum without central sculpture that contrasts with adjacent lateral areas. Brazil (Rondônia) ***Hemilissa birai* Galileo et al., 2016**
 - Pronotum with central sculpture that distinctly contrasts with adjacent lateral areas 9
9. Prothorax slightly longer than wide (length, 1.4–2.0 mm; largest width, 1.3–1.7 mm) with sides convex; centre of pronotum without distinct longitudinal depression. French Guiana, Brazil (Roraima, Amazonas, Amapá, Pará, Mato Grosso) ***Hemilissa catapotia* Martins, 1976**
 - Prothorax much longer than wide (length, 1.5–2.8 mm; largest width, 1.2–2.2 mm) with sides parallel; centre of pronotum with visible wide longitudinal depression 10
10. Punctures on base of elytra not tuberculiform; elytral apices bispinose 11
 - Punctuation on base of the elytra tuberculiform; elytral apices with long outer spine and a small toothed inner spine 12
11. Prosternal process narrow, width at narrowest point equal to 1/4 of procoxal cavity width; elytra bicolorous, with longitudinal yellowish-red band; elytral spines long, the external spine longer than three times the pedicel (Figs. 9–12). Colombia (Bolívar) ***Hemilissa bifasciata* García, Botero, and Martínez, new species**
 - Prosternal process wide, width at narrowest point equal to 1/3 of procoxal cavity width; elytra unicolorous; elytral spines short, the external spine, at maximum, 1.5 times the length of pedicel (Figs. 14–17). Colombia (Bolívar) ***Hemilissa erikae* García, Botero, and Martínez, new species**
12. Elytra shiny, without microsculpture, densely punctate; pronotal groove smooth and shiny. Costa Rica, Colombia (Putumayo), Guyana, French Guiana, Brazil (Amazonas, Pará, Rondônia, Maranhão, Rio Grande do Norte, Paraíba, Bahia, Tocantins, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Espírito Santo, São Paulo), Peru (Loreto), Bolivia (Beni, Santa Cruz) ***Hemilissa sulcicollis* Bates, 1870**
 - Elytra punctate and microsculptured on basal half; pronotal groove opaque and with transversal wrinkles. Brazil (Bahía, Espírito Santo) ***Hemilissa undulaticollis* Zajciw, 1960**

***Migorybia santossilvai* García, Botero, and Martínez, new species**

<http://zoobank.org/urn:lsid:zoobank.org:act:0171DA65-5AED-41EC-BDFE-9ADCB8F5FD7C>.

Figures 26–30.

Type material

Holotype female. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 9°51'12.4"N, 75°10'41.4"W), 15–16.iv.2018, K. García, “trampa de luz UV,” MPUJ_ENT 0061406 (MPUJ). *Paratype*. COLOMBIA, *Bolívar*: San Jacinto (Reserva La Flecha, 324 m, 9°51'12.4"N, 75°10'41.4"W), one male, 15–16.iv.2018, K. García, “trampa de luz blanca” (UARC).

Diagnosis

This species can be distinguished from other species in the genus by the dark integument, central area of pronotum without depression, pronotum without distinct gibbosities.

Description

Female. Integument reddish brown; antennae and ventrites slightly lighter.

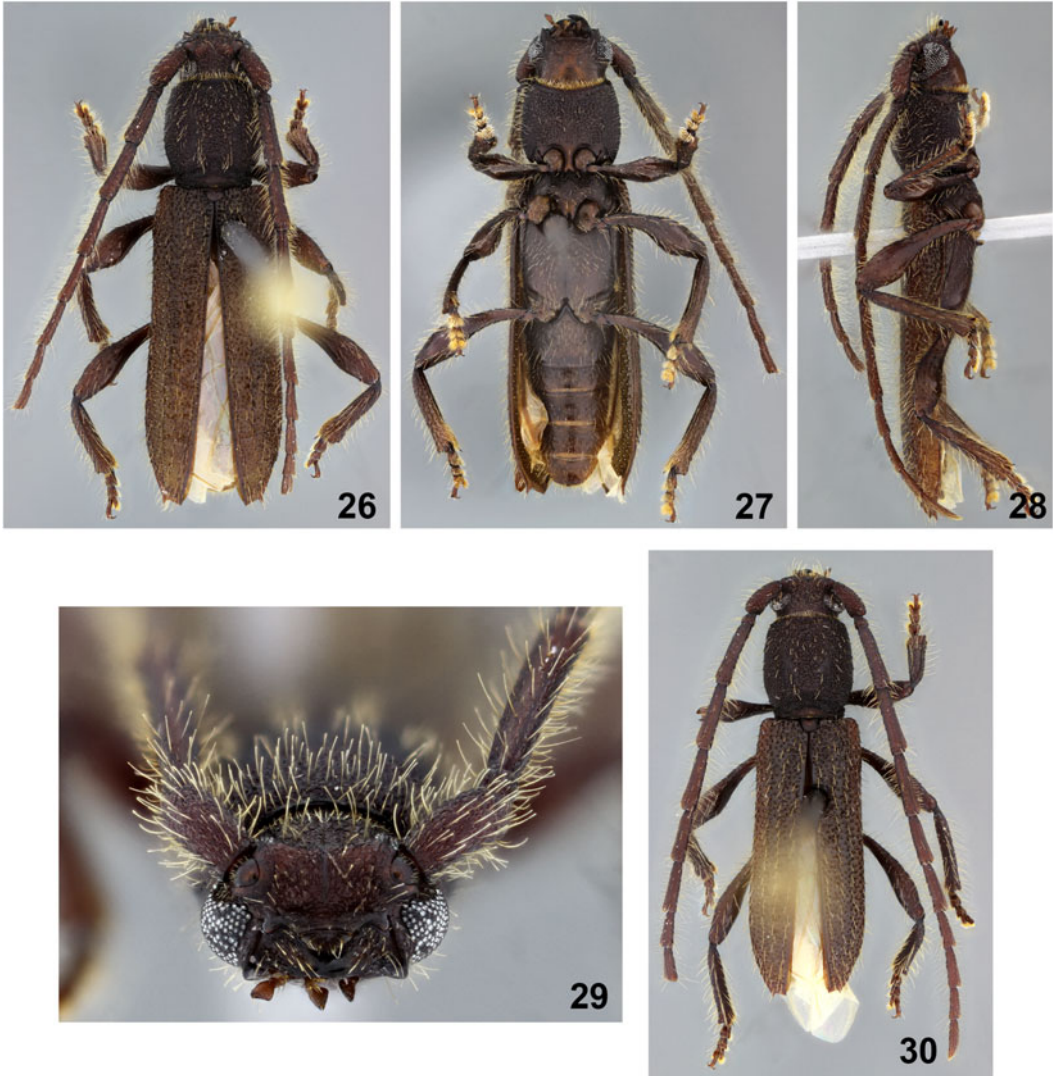
Head. Frons coarsely, shallowly, confluent punctate; with sparse, short setae. Central area between antennal tubercles shallowly, confluent punctate; with longitudinal, well-marked carina on each side, between antennal tubercle and median groove, with uniformly dense, long setae. Remaining surface of vertex coarsely, confluent punctate. Antennal tubercle with apex projected. Gulae finely, transversely striate, more distinctly towards mentum. Mandibles with long, sparse pale yellow setae on outer surface. Distance between upper eye lobes 3.4 times width of one upper eye lobe. Antennae reaching elytral apex at antennomere XI. Scape coarsely, densely, confluent punctate; with long, uniformly spaced setae. Antennal formula (ratio) based on length of antennomere III (only the holotype measured): scape = 0.61; pedicel = 0.16; IV = 0.92; V = 0.87; VI = 0.74; VII = 0.74; VIII = 0.55; IX = 0.61; X = 0.50; XI = 0.71.

Thorax. Prothorax about 1.1 times longer than maximum width, sides gradually, uniformly rounded; posterior margin slightly constricted. Pronotum coarsely punctate; posterior area strongly semicircularly depressed; with sparse, long setae throughout, Prosternum densely, confluent punctate; with sparse, long, pale yellow setae. Prosternal process narrowed at middle and expanded at apex, width at narrowest point equal to 1/4 of procoxal cavity width. Mesoventrite tumid, slightly depressed anteriorly, surface rugose. Mesoventral process about 1/2 of mesocoxal cavities width, deeply emarginate at apex. Metanepisternum with short, abundant, uniformly spaced white setae. Metaventrite microsculptured anteriorly and laterally, smoother towards central and posterior region; with long, pale yellow setae laterally. Scutellum glabrous, rounded at apex. Elytra coarsely, deeply, abundantly punctate on basal half, gradually finer and sparser towards apex; with sparse, long setae arranged in five longitudinal rows; apex obliquely truncate, with spine at outer angle. Legs with long, rather uniformly spaced setae; tibiae distinctly carinate.

Abdomen. Ventrites microsculptured on anterior margin, with long setae; apex of ventrite V truncate.

Measurements. Holotype, female, total length: 7.6 mm, prothorax length: 1.8 mm, prothorax width at widest point: 1.6 mm, elytral length: 5.2 mm, humeral width: 1.8 mm. Paratype, male, total length: 8.2 mm, prothorax length: 1.7 mm, prothorax width at widest point: 1.6 mm, elytral length: 5.5 mm, humeral width: 1.9 mm.

Males. Antennae longer than females, reaching elytral apex at antennomere X. Elytral apex slightly emarginate in males, with inner apex slightly projected.



Figs. 26–30. *Migorybia santossilvai* new species. 26, holotype female, dorsal view; 27, holotype female, ventral view; 28, holotype female, lateral view; 29, holotype female, details of head, frontal view; 30, paratype male, dorsal view.

Etymology

The specific name is in honour of our friend and colleague Antonio Santos-Silva, in recognition of his countless contributions to Cerambycidae and for his friendship and willing assistance to others.

Remarks

Migorybia santossilvai differs from *M. miranda* Martins, 1985 by the darker, reddish-brown integument (more red in *M. miranda*), pronotum without deep longitudinal central depression at posterior half (in *M. miranda*, with longitudinal central depression at posterior half), and without evident gibbosities (with two evident gibbosities at posterior half in *M. miranda*). Additionally,

according to Tavakilian and Chevillotte (2019) *Migorybia* is restricted to Venezuela, so we here record this genus in Colombia for the first time.

New geographical records

***Hemilissa opaca* Martins, 1976.** Geographical distribution: Colombia (Putumayo, Vaupés), Guyana, French Guiana, Venezuela, Brazil (Roraima, Amazonas, Pará, Maranhão). The department record from Vaupés (Colombia) is new.

Material examined: COLOMBIA, Vaupés: Caparú (Estación Biológica Mosira-Itajura, 1°4'S, 69°31'W, 60 m, Igapo), 28.iv–5.v.2004, Malaise, J. Pinzón, IAvH-E-209940 (IAVH).

***Hemilissa sulcicollis* Bates, 1870.** Geographical distribution: Costa Rica, Colombia (Amazonas, Putumayo), Guyana, French Guiana, Peru, Brazil (Amazonas, Pará, Rondônia, Mato Grosso, Goiás, Maranhão, Rio Grande do Norte, Paraíba, Bahia, Minas Gerais, Espírito Santo, São Paulo), Bolivia (Beni, Santa Cruz). The department record from Amazonas (Colombia) is new.

Material examined: COLOMBIA, Amazonas: Parque Nacional Natural Amacayacu (Cabaña Lorena, 3°0'S, 69°59'W, 210 m), 1–15.ix.2001, Malaise, D. Deaza, IAvH-E-209973 (IAVH).

***Haruspex inscriptus* Gahan, 1895.** Geographical distribution: Mexico (Oaxaca), Honduras, El Salvador, Costa Rica, Colombia (Bolívar, Cundinamarca), Venezuela, Barbados, Saint Vincent and the Grenadines (Grenada, Bequia), Trinidad and Tobago. The department record from Bolívar (Colombia) is new.

Material examined: COLOMBIA, Bolívar: San Jacinto (Reserva La Flecha, 324 m, 9°51'12.4"N, 75°10'41.4"W), 12–14.vi.2018, K. García, “trampa de luz UV” (UARC).

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References

- Botero, J.P. 2018. La familia Cerambycidae (Coleoptera: Chrysomeloidea) en Colombia. *In* Escarabajos del neotropico (Insecta: Coleoptera). Edited by C. Deloya and H. Gasca. S y G editores, Mexico City, Mexico. Pp. 153–169.
- Galileo, M.H.M., Bezark, L., and Santos-Silva, A. 2016. Descriptions of three new species and new records of Cerambycidae (Coleoptera) from America. *Deutsche Entomologische Zeitschrift*, **63**: 9–16.
- Lawrence, J.F., Beutel, T.G., Leschen, R.A.B., and Slipinski, A. 2010. Glossary of morphological terms. *In* Handbook of Zoology, Arthropoda Insecta. Coleoptera, Beetles, Morphology and Systematics, volume 2. Edited by R.A.B. Leschen and R.G. Beutel. De Gruyter, Berlin, Germany. Pp. 9–20.
- Martins, U.R. 1976. Sistemática e evolução da tribo Piezocerini (Coleoptera, Cerambycidae). *Arquivos de Zoologia*, **27**: 165–370.
- Martins, U.R. 2003. Tribo Piezocerini. *In* Cerambycidae Sul-Americanos (Coleoptera), Taxonomia, volume 6. Edited by U.R. Martins. Sociedade Brasileira de Entomologia, Curitiba, Brazil. Pp. 65–201.

- Monné, M.A. 2019. Catalogue of the Cerambycidae (Coleoptera) of the Neotropical region. Part I. Subfamily Cerambycinae [online]. Available from http://cerambycat.com/Parte1_Cerambycinae_2018.pdf [accessed 25 September 2019].
- Tavakilian, G. and Chevillotte, H. 2019. Titan: base de données internationale sur les Cerambycidae ou Longicornes; version 3.0 [online]. Available from <http://titan.gbif.fr> [accessed 25 September 2019].

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