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Two new species of *Corynellus* Bates, 1885 (Coleoptera: Cerambycidae: Cerambycinae)

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# Two new species of *Corynellus* Bates, 1885 (Coleoptera: Cerambycidae: Cerambycinae)

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**Abstract.** Two **new species** of *Corynellus* (Coleoptera: Cerambycidae: Cerambycinae) are described: *C. rebeccae* Santos-Silva and Wappes, from Bolivia; and *C. elianae* Santos-Silva and Wappes, from Panama. A key to species of *Corynellus* is provided.

Key words. Central America, longhorned beetles, Pteroplatini, South America, taxonomy.

ZooBank registration: urn:lsid:zoobank.org:pub:8DAAC466-8318-4233-871D-2CECB9EF80D9

#### Introduction

Currently, the genus *Corynellus* Bates, 1885 includes seven species. Four of them, *C. cinnabarinus* Chemsak and Linsley, 1979, *C. lampyrimorphus* Swift, 2008, *C. lutescens* Noguera and Gutiérrez, 2019, and *C. mimulus* Bates, 1885, occur in Central America with *C. arrogans* (Buquet, 1840) and *C. aureus* Linsley, 1961 only known from South America, and lastly *C. ochraceus* Bates, 1885 recorded from both areas. Of these, *C. lutescens*, *C. arrogans*, *C. mimulus*, and *C. aureus* are only formally known by the holotype as is *C. elianae* Santos-Silva and Wappes described here. The other new species *C. rebeccae* Santos-Silva and Wappes is represented by both sexes and is the first species known to be geographically distributed south of Ecuador.

#### Materials and Methods

Photographs were taken in the MZSP with a Canon EOS Rebel T3i DSLR camera, Canon MP-E 65 mm f/2.8 1–5× macro lens, controlled by Zerene Stacker AutoMontage software. Measurements were taken in mm using a measuring ocular Hensoldt/Wetzlar - Mess 10 in the Leica MZ6 stereomicroscope, also used in the study of the specimens.

The acronyms used in the text are as follows:

FSCA Florida State Collection of Arthropods, Gainesville, Florida, USA

FWSC Fred W. Skillman, Jr. collection, Phoenix, Arizona, USA

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

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#### Results

## *Corynellus rebeccae* Santos-Silva and Wappes, new species (Fig. 1–6)

Description. Holotype male (Fig. 1-4). Head orange, except wide black band behind eyes, which includes the eyes dorsally and antennal tubercles forming a wide subquadrate macula covering most of frons; maxillary and labial palpomere I brownish-orange with pale apex, maxillary palpomere II-III and labial palpomere II brownish with pale apex, and maxillary palpomere IV and labial palpomere III blackish with yellowish apex; mandibles brownish-orange on basal half, black on posterior half; scape mostly orange on anterior half, black on remaining surface; pedicel and antennomeres black. Pronotum orange except one wide, longitudinal black band on each side. Sides of prothorax orange, except wide, longitudinal black band placed closer to prosternum than pronotum. Prosternum yellowish except yellowish-white sides and apex of prosternal process. Ventral surface of mesothorax blackish laterally, central area of mesoventrite yellowish, and mesoventral process gradually yellowish-white. Ventral surface of metathorax black except one small, irregular brownish-orange macula on each side of posterior region. Scutellum black. Elytra orange on anterior 1/2 except black longitudinal band along suture on anterior sixth (narrowed toward its apex); posterior third dark blue, with irregular black areas interspersed. Procoxae yellowish except blackish macula close to trochanter; mesocoxae yellowish on anterior half, black on posterior half; metacoxae black. Trochanters darkened close to coxae, gradually yellowish toward apex. Femora yellowish-brown on peduncle, base of dorsal surface and most of sides and ventral surface of club, blackish on remaining surface. Tibiae and tarsi black. Abdomen black.

Head. Frons coarsely, sparsely punctate (punctures partially confluent); with erect yellowish-brown setae, and a few brownish setae interspersed, except central area glabrous. Area between antennal tubercles with short, sparse yellowish-brown setae; remaining central area of vertex with dense yellowish-brown pubescence, except triangular area close to prothorax nearly glabrous, and sides with minute, sparse yellowish-brown setae, with a few long, erect brownish setae close to eyes. Area behind eyes somewhat coarsely, partially confluent behind upper eye lobes, finely, sparsely punctate behind lower eye lobes; area close to eye with sparse, short yellowish-brown setae, and long, erect, sparse brownish setae interspersed behind lower eye lobes, and area close to prothorax glabrous. Genae finely, sparsely punctate, except smooth apex and sides of area close to mandible; with short, sparse yellowish setae, and long, erect sparse yellowish and brownish setae interspersed. Antennal tubercles finely, sparsely punctate basally, smooth on remaining surface; with short, sparse yellowish-brown setae basally, remaining surface glabrous. Wide central area of postclypeus with sparse, short, erect yellowish setae, and long, erect brownish setae interspersed, sides glabrous. Labrum with long, sparse yellowish-brown setae directed forward. Gulamentum smooth, glabrous on posterior half, striate-punctate, with long, erect, yellowish-brown setae on anterior half. Distance between upper eye lobes 0.66 times length of scape (0.38 times distance between outer margins of eyes); in frontal view, distance between lower eye lobes 0.79 length of scape (0.45 times distance between outer margins of eyes). Antennae about as long as elytra, reaching posterior fifth of elytra. Scape with minute, very sparse yellowish setae, and long, erect dark setae throughout. Pedicel and antennomeres with dark pubescence, and long, erect dark seta interspersed, throughout on pedicel and antennomeres III-IV (distinctly abundant on posteroventral area of III-IV); remaining antennomeres with long, erect, sparse dark setae (shorter on XI). Antennal formula (ratio) based on length of antennomere III: scape = 0.96; pedicel = 0.19; IV = 0.92; V = 1.27; VI = 1.04; VII = 1.00; VIII = 0.88; IX = 0.84; X = 0.81; XI = 0.96.

**Thorax.** Pronotum coarsely, shallowly, sparsely punctate centrally, coarsely, abundantly, deeply punctate laterally; with abundant brownish-orange pubescence partially obscuring integument on light areas, slightly brownish on dark areas; with long, erect, abundant brownish setae throughout. Sides of prothorax coarsely, sparsely punctate; pubescence and erect setae as on pronotum. Prosternum with sparse yellowish pubescence, and long, erect sparse yellowish setae interspersed; prosternal process longitudinally sulcate, with its narrowest area about 0.25 times width of procoxal cavity. Mesoventrite with sparse yellowish pubescence centrally, distinctly denser laterally. Mesanepisternum sparsely pubescent superiorly, with abundant yellowish-brown pubescence toward mesepimeron; mesepimeron with abundant yellowish-brown pubescence. Mesoventral process deeply emarginate posteriorly; narrowest area 0.35 times width of mesocoxal cavity. Metanepisternum with brownish



**Figures 1–6.** *Corynellus rebeccae.* **1–4**) Holotype male. **1**) Dorsal habitus. **2**) Ventral habitus. **3**) Lateral habitus. **4**) Head, frontal view. **5–6**) Paratype female. **5**) Dorsal habitus. **6**) Ventral habitus.

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pubescence not obscuring integument. Metaventrite with brownish pubescence not obscuring integument laterally, and long, erect, sparse brownish setae throughout, except central area glabrous. Scutellum with sparse yellowish-brown pubescence. Elytra. Sides gradually widened toward posterior quarter, then gradually narrowed toward apex; finely and abundantly punctate on anterior ¾, rugose on posterior third (dark posterior area); with dense brownish-orange pubescence, and long, erect setae of same color interspersed on light and dark anterior area, with long, erect dark seta on dark blue area; epipleural margin with short fringe of brownish-orange setae on light area, dark on dark blue area. Legs. Femora pedunculate-clavate, especially meso- and metafemora; with long, erect, sparse setae throughout, most on peduncle and ventral surface of club yellowish, and most on dorsal surface blackish. Tibiae with both short and long erect setae, mostly yellowish basally, darker toward apex; ventral surface of protibiae with abundant, erect yellowish-brown setae ventrally; apex of ventral surface with short, bristly, abundant dark setae near apex of meso- and metatibiae.

**Abdomen.** Ventrites with very sparse, long, erect, brownish setae; apex of ventrite V widely emarginate centrally.

**Female** (Fig. 5–6). General color as in male, except, area between antennal tubercles entirely dark brown; scape entirely black; prosternum and prosternal process brownish-orange; mesoventrite and mesoventral process blackish; trochanters dark brown; light area of femora brownish-orange. Antennae 0.90 times elytral length, reaching base of posterior third of elytra. Apex of abdominal ventrite V truncate.

**Dimensions in mm (holotype male/paratype female).** Total length, 12.50/13.65; prothoracic length, 1.85/2.00; anterior prothoracic width, 1.60/1.75; posterior prothoracic width, 2.20/2.15; maximum prothoracic width, 2.40/2.50; humeral width, 3.10/3.50; elytral length, 9.70/10.30.

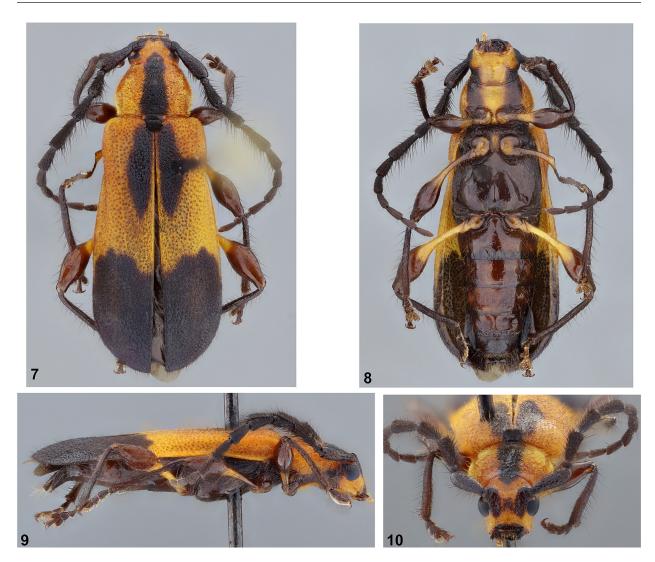
**Type material.** Holotype male from BOLIVIA, Santa Cruz: Florida, 4 km N Bermejo, Refugio Los Volcanes, 18°06′S / 63°36′W, 1000–1200 m, 12.XII.2012, Skillman and Wappes col. (FSCA, formerly FWSC). Paratype female, same data as holotype, except 16.XII.2012 (FWSC).

**Remarks.** Corynellus rebeccae sp. nov. is similar to *C. mimulus* Bates, 1885, but differs as follows: prothorax lacking dark band on posterocentral area; elytra more distinctly widened from base to posterior quarter; elytra five times as long as prothorax; anterior dark sutural band not reaching posterior dark area. In *C. mimulus*, the prothorax has dark posterocentral band, elytra less widened from base to posterior quarter, about four times longer than prothorax, and dark sutural band fused with the dark posterior area.

Etymology. The species is dedicated to Rebecca Ann Wappes, wife of the second co-author.

# *Corynellus elianae* Santos-Silva and Wappes, new species (Fig. 7–10)

Description. Holotype female. Head orange, except triangular black band on center of vertex close to prothorax, W-shaped dark, almost black macula on frons, which encompasses antennal tubercles, and dark brown, almost black wide band behind lower eye lobes, extending to ventral surface of head; mouthparts mostly black, with sides more yellowish-orange; antennae and most of mandibles black. Pronotum dark orange except wide central longitudinal band, from base to apex, somewhat widened posteriorly. Sides of prothorax dark orange. Prosternum dark brown laterally, forming band, which is an extension of those on head, yellowish centrally; prosternal process yellowish with sides slightly darker. Ventral surface of mesothorax dark brown almost black; mesoventral process dark orange centrally, darker brown on sides and apex. Ventral surface of metathorax dark brown centrally, blackish laterally. Scutellum black. Elytra orange except large, longitudinal black band on anterior half near suture, which does not reach base or suture, widened centrally, distinctly narrowed on its apex, and black posterior area covering the elytra (this area slightly shorter than half of elytral length) with its anterior margin irregular. Profemora with peduncle yellowish-orange and remaining surface brown; mesofemora with about anterior 3/3 of peduncle brownish, posterior third of peduncle and base of club yellowish-orange, remaining surface brown; metafemoral peduncle and base of club pale yellowish-orange, remaining surface brown. Tibiae and tarsi dark brown, almost black. Abdominal ventrite I dark reddish-brown centrally, darker anteriorly, and black posteriorly; abdominal ventrites II-IV dark reddish-brown, apex black; abdominal ventrite V dark brown, almost black.



**Figures 7–10.** *Corynellus elianae*, holotype female. **7)** Dorsal habitus. **8)** Ventral habitus. **9)** Lateral habitus. **10)** Head, frontal view.

Head. Frons coarsely confluently punctate (general appearance striated); with minute, very sparse yellowish setae. Vertex finely, sparsely punctate (punctures slightly more abundant laterally); area between antennal tubercles with short, decumbent pale yellow setae not obscuring integument; remaining surface with very sparse, decumbent pale yellow setae, except central area close to prothorax with more abundant brownish setae. Area behind upper eye lobes coarsely, shallowly, partially confluently punctate; glabrous. Area behind lower eye lobes coarsely, partially confluently punctate close to eye, nearly smooth close to prothorax; with a few short yellowish setae near eye. Genae finely, abundantly punctate, except smooth apex; with minute, sparse yellowish setae, and long, erect, sparse setae of same color interspersed, apex glabrous. Antennal tubercles coarsely, confluently punctate on frontal base, posterior basal area finely, sparsely punctate, smooth on remaining surface; with a few short, erect brownish setae on punctate area. Wide central area of postclypeus finely and abundantly punctate, with short, sparse, erect brownish setae; sides smooth and glabrous. Labrum with long yellowish-brown setae directed forward. Gulamentum smooth, posterior ½ glabrous, striate-punctate, with a few long, erect yellowish setae on anterior third. Distance between upper eye lobes 0.73 times length of scape (0.54 times distance between outer margins of eyes); in frontal view, distance between lower eye lobes 0.81 length of scape (0.60 times distance between outer margins of eyes). Antennae 1.1 times elytral length, reaching posterior fifth of elytra.

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Scape with short, decumbent, sparse brownish setae dorsally and laterally with both short and long, erect, moderately abundant brownish setae ventrally. Pedicel with long, erect dark setae throughout. Antennomeres III–V with bristly dark pubescence, and long, erect dark setae interspersed dorsally and laterally, and long, abundant dark setae ventrally (slightly sparser on V); antennomere VI with dark pubescence throughout, short, erect dark setae interspersed dorsally, and long, erect dark setae interspersed ventrally; remaining antennomeres with dark pubescence, and short, erect setae interspersed. Antennal formula (ratio) based on length of antennomere III: constant constant

Thorax. Prothorax with sides of anterior half straight, divergent from anterolateral angles; posterior half rounded. Pronotum coarsely, sparsely punctate; light areas with abundant yellow pubescence, partially obscuring integument on some areas, and dark area with brownish pubescence not obscuring integument (appearing to be darker due to the integument color); with long, erect, sparse setae interspersed, orangish on light areas, blackish on dark area. Sides of prothorax with sculpturing, pubescence and erect setae as on light areas of pronotum. Prosternum finely, transversely striate; with minute, sparse yellowish setae; prosternal process with long, erect, sparse yellowish setae laterally, with its narrowest area 0.12 times width of procoxal cavity. Mesoventrite with long, erect brownish setae centrally, more distinctly pubescent laterally. Mesoventral process 0.55 times width of mesocoxal cavity. Mesanepisternum and mesepimeron with brownish pubescence not obscuring integument. Metanepisternum and sides of metaventrite with dark pubescence partially obscuring integument; remaining surface of metaventrite with sparse, erect yellowish-brown setae, and short, sparse yellowish-brown pubescence, with long, erect yellowish-brown setae interspersed on each side of posterior area between metacoxal cavities. Scutellum with dark pubescence not obscuring integument. Elytra. Sides subparallel-sided on anterior quarter, gradually widened from this point to posterior quarter, then rounded toward sutural angle; coarsely, abundantly punctate from base to after middle, rugose on remaining surface (dark posterior area); with yellow pubescence not obscuring integument on light area, brownish, not obscuring integument on dark areas (slightly denser on posterior dark area); with long, erect setae throughout, mostly yellow on light area, dark on posterior dark area. Legs. Femora pedunculate-clavate, especially meso- and metafemora; with long, erect, sparse setae, yellow on lighter area, brownish on dark area. Tibiae with long, erect, spare dark setae; ventral surface of protibia with dense, bristly pubescence on posterior half; ventral surface of area close to apex of meso- and metatibiae with bristly dark pubescence.

**Abdomen.** Ventrites with long, erect, sparse brownish setae, sparser centrally; apex of ventrite V truncate. **Dimensions in mm (holotype female).** Total length, 9.45; prothoracic length, 1.45; anterior prothoracic width, 1.35; posterior prothoracic width, 1.95; maximum prothoracic width, 2.15; humeral width, 2.70; elytral length, 6.95.

Type material. Holotype female from PANAMA, Panama: 9–14 km N El Llano, 30.I.1992, F.T. Hovore col. (MZSP).

Remarks. Corynellus elianae new species is similar to C. mimulus Bates, 1885, but differs by: vertex with triangular black macula close to prothorax; pronotum with one central black band. In C. mimulus, vertex lacks triangular black macula close to prothorax, and pronotum has one black band on each side, and a black macula on center of posterior area. Corynellus mimulus is currently known only by the holotype described from Mexico. According to Bates (1885), the species is mostly black, with the head yellowish-brown, pronotum with the same color except three longitudinal black bands, and basal half of the elytra also yellowish-brown laterally, black centrally, and distal half black. Apparently, there is no dark macula on frons and behind eyes, but they may be omitted in the short description. Furthermore, Bates did not comment on the presence of black bands on the prosternum. Unfortunately, the short original description does not provide better differential features. It is likely that the black areas on the elytra would be variable in C. mimulus as this is common in nearly all species of Cerambycidae with yellow and black areas on elytra. However, in the other Corynellus material available to us the pronotal black bands do not vary.

*Corynellus elianae* shares with *C. ochraceus* Bates, 1885, the shape of the black band on pronotum, and the black band on posterocentral area of the vertex. However, the prothorax in *C. ochraceus* is uniformly rounded laterally, unlike *C. elianae*.

**Etymology.** The new species is dedicated to Eliane Nobre Vaz de Oliveira, wife of the first co-author.

#### Key to Species of Corynellus (see photographs of the species in Bezark 2020)

1.	Pronotum without black bands
_	Pronotum with at least one black band
2(1).	Pronotum entirely black; Colombia
_	Pronotum entirely brownish-orange
3(2).	Elytra four times pronotal length; femora entirely black; Guatemala, Honduras, Costa Rica
_	Elytra five times pronotal length; femora brownish-orange; Colombia
4(1).	Pronotum with a single longitudinal black band centrally
_	Pronotum with one longitudinal black band on each side
5(4).	Prothorax broadly rounded laterally; Nicaragua, Costa Rica, Panama
_	Prothorax distinctly narrowed anteriorly (anterior third nearly straight); Panama
6(4).	Distal antennomeres yellowish; Costa Rica
_	All antennomeres black or nearly black
7(6).	Elytra distinctly widened toward posterior quarter, five times as long as pronotal length; Bolivia  C. rebeccae Santos-Silva and Wappes, new species
_	Elytra not strongly widened toward posterior region, four times as long as pronotal length 8
8(7).	Sides of the prothorax broadly rounded; Mexico (Veracruz) C. lutescens Noguera and Gutiérrez, 2019
_	Prothorax distinctly narrowed anteriorly (anterior third nearly straight); Mexico
	C. mimulus Bates, 1885

**Observations.** According to Chemsak and Linsley (1979) on *C. cinnabarinus*: "Also tentatively assigned as this species is one female from Turrialba, Costa Rica, 2–4 February 1978 (E. Giesbert). This specimen differs by having a broad black longitudinal band on the pronotum and a black scutellum." We have seen photographs of three specimens from Costa Rica that exactly agree with this description. We believe they are either a variation of *C. ochraceus* or an undescribed species.

#### **Authors Note**

It is with great pleasure we name these two new *Corynellus* to recognize our spouses. It is a well-deserved token of our gratitude for their many years of fantastic support for our entomological endeavors. Special thanks to Eliane and Rebecca!

#### Acknowledgments

We thank Fred Skillman (FWSC) for providing specimens of the new species he collected for description in this study. Thanks also to Robert Androw, Gibsonia, Pennsylvania and Don Thomas, Weslaco, Texas for their careful and helpful reviews of the draft manuscript.

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