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New species of Trachyderini from Mexico and Central America
(Coleoptera: Cerambycidae: Cerambycinae)

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New species of Trachyderini from Mexico and Central America (Coleoptera: Cerambycidae: Cerambycinae)

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Abstract. Three new trachyderine species in the subtribe Trachyderina (Coleoptera: Cerambycidae: Cerambycinae: Trachyderini) are described: *Entomosterna kovariki* Wappes and Santos-Silva, **new species**, from Belize; *Gortonia sumideroensis* Wappes and Santos-Silva, **new species**, from Mexico (Chiapas); and *Sphaenothecus vandenberghiei* Wappes and Santos-Silva, **new species**, from Nicaragua. A new key to *Entomosterna* species, and a previous *Sphaenothecus* key by Chemsak and Noguera (1998) is modified to include the new species, with both provided herein.

Key words. Longhorned beetles, taxonomy, Trachyderina.

ZooBank registration. urn:lsid:zoobank.org:pub:69CA91BF-7FF4-46AB-8663-53878056E696

Introduction

Currently, the Trachyderini subtribe Trachyderina includes 144 genera, most of which are distributed in the Neotropical region (Tavakilian and Chevillotte 2020). The three genera included here are among them. Both *Entomosterna* Chevrolat, 1862 (previously just two species) and *Gortonia* Hovore, 1987 (previously just one species) are small in species numbers with *Sphaenothecus* Dupont, 1838 larger having seven species assigned to it. Only the latter has been recently reviewed (Chemsak and Noguera 1998) and in which three new species were described, others transferred into or out of the genus, resulting in new combinations. Additionally, they placed the genus *Taranomis* Casey, 1912 in synonymy with *Sphaenothecus*.

Most of the species in the Trachyderina are diurnally active and typically found either feeding on the blossoms or sitting on the foliage of fleshy plants or understory shrubs making them easily collected and often quite common. The new species described herein were collected in this manner but, obviously, they were not common.

Many of the genera in Trachyderina are poorly characterized, making new species generic placement difficult, thus pointing to the need for revisionary work at that level (but beyond the scope of this work).

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:

- ACMT** American Coleoptera Museum (James Wappes), San Antonio, Texas, USA
FSCA Florida State Collection of Arthropods, Gainesville, Florida, USA
LGBC Larry G. Bezark Collection, Sacramento, California, USA
MZSP Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil

Results

Entomosterna kovariki Wappes and Santos-Silva, new species

(Fig. 1–5)

Description. Holotype female. Frons, postclypeus, mandibles, area behind upper eye lobes, genae, and antennae black; vertex mostly black, except dark reddish-brown area close to prothorax; area behind lower eye lobes black close to eye, dark reddish-brown close to prothorax; ventral surface of head reddish-brown laterally, gradually yellowish toward central area, except narrow brown anterior area; basal segments of mouthparts reddish-brown, and yellowish-brown on distal segments except mostly black palpi. Prothorax yellow with narrow orangish anterior and posterior margins, and area surrounding procoxal cavities. Mesoventrite yellow centrally, black on sides of central region, reddish-brown laterally and narrow anterior margin. Mesanepisternum black with reddish-brown margins; mesepimeron dark brown; metanepisternum black. Metaventrite black laterally, center yellowish for much of basal half, reddish-brown on center of posterior half, with dark brown infusion centrally near middle (extension from black area). Scutellum black. Elytra mostly black, except narrow dark reddish-brown macula on each side of scutellum. Procoxae mostly orangish, with blackish area close to trochanter; mesocoxae orangish anteriorly, black on remaining surface; metacoxae mostly black, except posterior region brown. Femora, tibiae, and tarsi black. Abdominal ventrites I–IV yellow, with apex orangish; abdominal ventrite V orangish basally, remaining surface black.

Head. Frons tumid centrally; finely, densely punctate, except smooth central plate close to postclypeus (this plate slightly more elevated than remaining central area); with abundant dark brown pubescence (partially more yellowish-brown depending on light intensity), not obscuring integument, except glabrous central plate; with a few long, erect dark brown setae laterally. Area between antennal tubercles and beginning of upper eye lobes finely punctate (punctures distinctly coarser and sparser than on frons), with central area smooth; area between upper eye lobes finely, and behind beginning of upper eye lobes densely punctate (punctures distinctly coarser than on frons), with central region smooth; remaining surface of vertex finely, abundantly punctate, abundantly punctate near eyes, smoother close to prothorax (punctures mostly transverse); punctate area between antennal tubercles and upper eye lobes with dense, bristly dark brown pubescence, with nearly glabrous sides between these areas, glabrous on smooth area; area with punctures mostly transverse with short, sparse, bristly yellowish-brown setae, and smooth area close to prothorax glabrous; area between antennal tubercles and close to upper eye lobes with a few long, erect yellowish-brown setae. Remaining surface of area behind upper eye lobes and behind lower eye lobes finely, sparsely punctate; with short, erect, sparse yellowish-brown setae close to inferior area of lower eye lobes. Genae finely, sparsely punctate, with apex smooth; with short, sparse, nearly erect yellowish-brown setae, setae lacking in glabrous smooth area. Median groove distinct from clypeus to area between antennal tubercles. Antennal tubercles finely, sparsely punctate (punctures coarser than on frons), except apex smooth; with sparse, bristly brownish setae. Postclypeus carinate, finely, shallowly punctate on wide central area, smooth laterally; with short, erect, sparse yellowish-brown setae, with a few long, erect setae of same color interspersed, glabrous laterally. Labrum coplanar with anteclypeus on posterior half, oblique on anterior half; finely, densely punctate on coplanar area, nearly smooth on oblique area; with long, erect golden setae directed forward on coplanar area (longer laterally), oblique area glabrous, except short fringe of yellowish setae near apex of central region. Gula-mentum somewhat striate punctate on sides of posterior $\frac{2}{3}$, smooth centrally on posterior $\frac{2}{3}$; anterior third finely rugose-punctate; posterior $\frac{1}{3}$ glabrous, with long, erect yellowish-brown setae on anterior third. Distance between upper eye lobes 0.60 times length of scape (0.53 times distance between outer margins of eyes); in frontal view, distance between lower eye lobes equal to length of scape (0.57 times distance between outer margins of eyes). Antennae 1.45 times elytral length, reaching elytral apex slightly after middle of antennomere XI. Scape finely,



Figures 1–9. *Entomosterna* spp. 1–5) *Entomosterna kovariki*, holotype female. 1) Dorsal habitus. 2) Ventral habitus. 3) Lateral habitus. 4) Head, frontal view. 5) Pronotum. 6–9) *Entomosterna cruentata*, female. 6) Head, frontal view. 7) Dorsal habitus. 8) Ventral habitus. 9) Lateral habitus.

abundantly punctate, apex of dorsal surface smooth, and nearly smooth on sides of apex; with short, abundant dark pubescence not obscuring integument, with short, erect dark setae interspersed. Pedicel and antennomeres III–VI with dark pubescence not obscuring integument, with fringe of short, erect black setae ventrally (gradually sparser toward VI); remaining antennomeres with shorter, denser, dark pubescence, and a few short, erect dark setae on apex of ventral surface (erect setae absent on XI, and a few short setae present about middle of some antennomeres). Antennal formula (ratio) based on length of antennomere III: scape = 0.51; pedicel = 0.10; IV = 0.67; V = 0.67; VI = 0.64; VII = 0.62; VIII = 0.58; IX = 0.53; X = 0.46; XI = 0.63.

Thorax. Prothorax wider than long (including lateral tubercles); sides with distinct tubercle centrally. Pronotum gibbous on each side of posterior half; finely, sparsely punctate on anterior $\frac{3}{4}$ (punctures gradually sparser toward apex of this region), smooth on posterior quarter; with long, erect dark seta emerging from each puncture, absent on gibbosities, and nearly absent on center of posterior quarter. Sides of prothorax finely, sparsely punctate on anterior third, nearly smooth on remaining surface; with short, erect, sparse, pale yellow setae on anterior third, remaining surface glabrous. Prosternum minutely, abundantly striate-punctate; with long, erect, abundant yellowish-white setae. Prosternal process longitudinally tumid centrally; apex tab-shaped on each side; narrowest area about 0.4 times width of procoxal cavity. Mesoventrite finely, somewhat striate-punctate centrally, finely, moderately abundantly punctate laterally; with sparse grayish-white pubescence centrally, denser laterally, and long, erect setae of same color interspersed. Mesoventral process tumid, with apex tab-shaped; narrowest area 0.55 times width of mesocoxal cavity. Mesanepisternum, mesepimeron and metanepisternum finely, abundantly punctate (punctures slightly coarser on metanepisternum); with abundant grayish-white pubescence not obscuring integument. Metaventricle with abundant, short, both decumbent and bristly yellowish-brown setae laterally, and long, erect setae of same color toward central region. Scutellum with dark pubescence not obscuring integument. **Elytra.** Coarsely, abundantly punctate throughout; with moderately long, erect dark seta emerging from each puncture; apex almost truncate, with rounded angles. **Legs.** Profemora subfusiform, finely, sparsely punctate, with short, decumbent yellowish setae dorsally and laterally, a little longer and bristly on apex of dorsal surface, with long, erect, abundant setae of same color ventrally, gradually shorter toward apex. Mesofemora subpedunculate, arched on basal third; longitudinally carinate on sides of posterior half; finely, abundantly punctate (punctures coarser than on profemora), except posterior half of ventral surface smooth; with sparse, golden pubescence dorsally and laterally, and long, erect setae of same color on punctate area of ventral surface, impunctate area glabrous. Metafemora slightly arched on anterior quarter; longitudinally carinate on sides of posterior $\frac{2}{3}$; finely, abundantly punctate throughout (punctures slightly deeper than on mesofemora); with yellowish-white pubescence on anterior quarter, black, bristly on remaining surface, except short and erect setae ventrally on posterior $\frac{3}{4}$. Protibiae finely, sparsely punctate; with a few short yellowish-brown setae dorsally, distinctly longer, bristly, denser ventrally, especially from basal third. Meso- and metatibiae finely, abundantly punctate; with abundant, decumbent black setae not obscuring integument, and short, erect, abundant dark setae ventrally. Metatarsomere I distinctly longer than II+III, about 0.4 times length of metatibiae; metatarsomere II 0.45 times length of I; metatarsomere V 0.67 times length of I.

Abdomen. Ventrites I–IV with sparse, both short and long, pale yellow setae (slightly more abundant laterally), ventrite V with short, pale yellow setae, and long, erect setae of same color interspersed, especially laterally. Ratio of ventrites, based on V: I (including abdominal process), 2.8; II = 1.32; III = 1.27; IV = 1.22.

Chromatic variation, paratype female (LGBC). Elytra reddish-brown on dorsal basal third and side of basal fifth, except sutural region and part of humeral region: ventral surface of mesothorax, and base of metanepisternum reddish-brown.

Male. Head black, except posterocentral area of gulamentum orangish; prothorax orangish, slightly brownish on posterior margin; ventral surface of meso- and metathorax black, except orangish posterior $\frac{2}{3}$ of mesoventrite, and central area of metaventricle (orangish area of metaventricle widened on anterior third); legs with color as in female; abdominal ventrite V orangish. Antennae 1.95 times elytral length, reaching elytral apex near apex of antennomere VIII. Pronotal punctures slightly coarser than in female.

Dimensions in mm (holotype female/paratype male). Total length, 16.40/14.75; prothoracic length, 3.20/2.85; anterior prothoracic width, 2.30/2.10; posterior prothoracic width, 3.40/2.75; maximum prothoracic width, 4.00/3.15; humeral width, 3.90/3.30; elytral length, 11.10/9.70. The LGBC specimens were not measured.

Type material. Holotype female from BELIZE, ORANGE WALK: Rio Bravo Conservation Area, vic. La Milpa Field Station, 8–13.VII.1996, W.B. Warner, J. Shuey, P. Kovarik and C. W. O'Brien col. (FSCA, formerly ACMT). Paratypes 1 male, same data as holotype, except 9–13.IX.1996, P.W. Kovarik col. (ACMT). STANN CREEK: 37 km W Dangriga, Middlesex Village, Trees, 186 m, 1 male, 20.VI–1.VII.2016, Jeff Smith col. (LGBC): 16 km W Dangriga, 83 m, sweeping vegetation, 1 female, 4–13.VII.2019, L. G. Bezark col. (LGBC).

Etymology. Named for Ohio coleopterist, Peter Kovarik, one of the collectors of the types who so kindly provided specimens of this new species to the authors.

Remarks. *Entomosterna kovariki* is similar to *E. ruficollis* Chemsak and Hovore, 2010, but differs as follows: antennae in female slightly surpassing elytral apex; antennae in male distinctly shorter (reaching elytral apex near apex of antennomere VIII); pronotum very finely and sparsely punctate on anterior half, nearly smooth on posterior half, especially on posterior third; metatarsomeres I, II and V distinctly shorter. In *E. ruficollis*, the antennae in female distinctly surpass the elytral apex, and are even longer in male (reaching elytral apex about apex of antennomere V), pronotum is moderately coarse, dense, deep punctate, and metatarsomeres I, II and V are distinctly longer. It differs from *E. cruentata* Chevrolat, 1862 (Fig. 6–9) by the elytra feebly longitudinally carinate (distinctly carinate in *E. cruentata*).

Key to species of *Entomosterna*

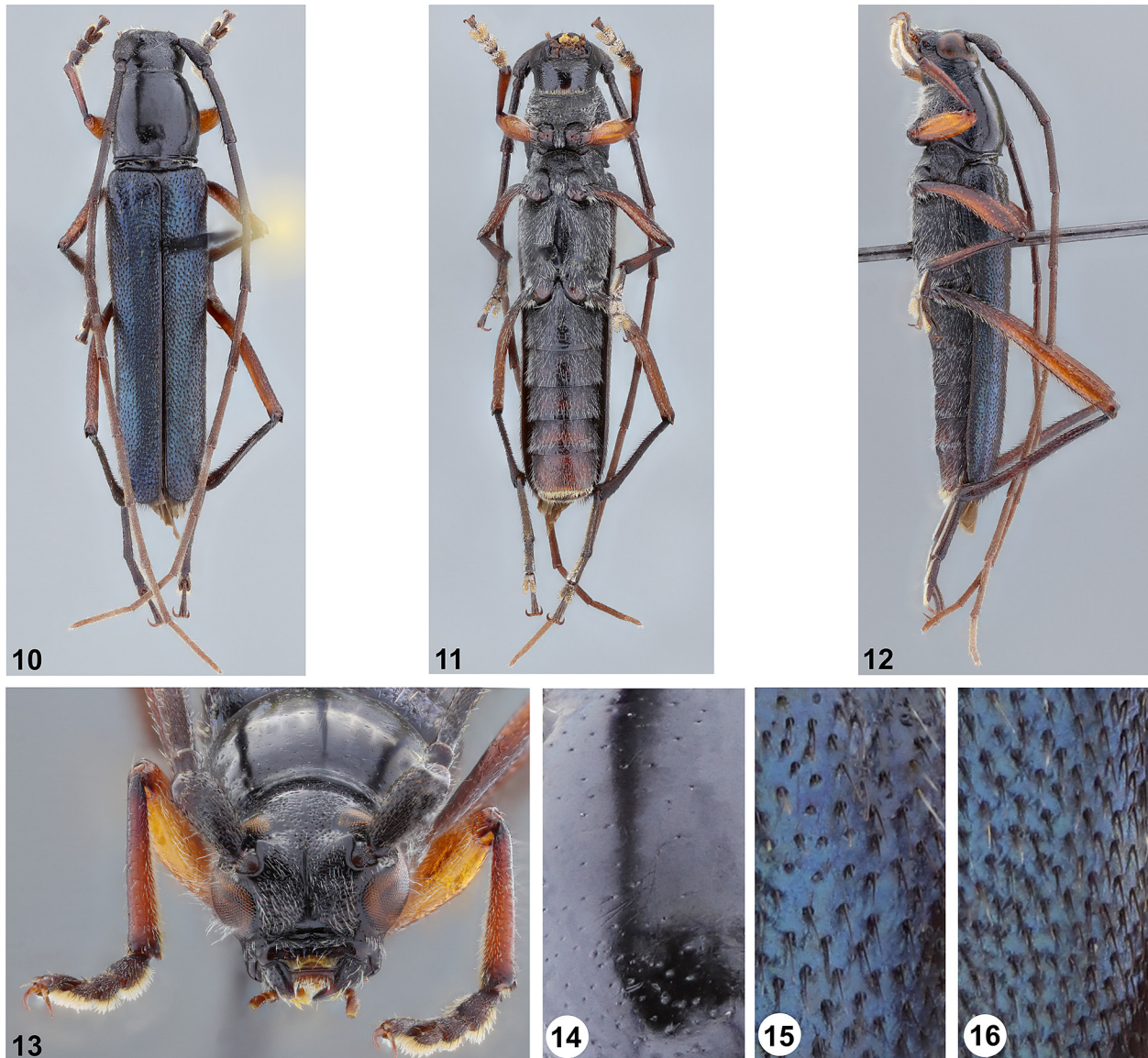
1. Elytra distinctly longitudinally carinate (Fig. 7); Mexico (Veracruz, Chiapas, Oaxaca, Quintana Roo, Tamaulipas), Guatemala *E. cruentata* Chevrolat, 1862
- Elytral carinae nearly absent 2
- 2(1). Antennae distinctly surpassing elytral apex in female, and surpassing elytral apex about apex of antennomere V in male; pronotum abundantly punctate; Mexico (Michoacán, Guerrero) *E. ruficollis* Chemsak and Hovore, 2010
- Antennae slightly surpassing elytral apex in female, and surpassing elytral apex about apex of antennomere VIII in male; pronotum sparsely punctate; Belize *E. kovariki* Wappes and Santos-Silva, new species

Gortonia sumideroensis Wappes and Santos-Silva, new species

(Fig. 10–16)

Description. Holotype male. Head, prothorax, and ventral surface of meso- and metathorax dark brown, almost black, with slightly violaceous reflections on some areas; parts of mouthparts dark reddish-brown; basal antennal segments dark brown, with slightly bluish reflections, and remaining segments gradually brown toward antennal apex; elytra dark blue metallic; profemora yellowish-brown with irregular dark reddish areas interspersed; meso- and metafemora almost black on basal half and apex, dark reddish-brown on remaining surface; distal half of tibiae brown, except black apex; tarsi dark brown; central area of abdominal ventrite II brown, central area of abdominal ventrite III dark reddish-brown centrally, and abdominal ventrite V dark brown with irregular dark reddish-brown areas interspersed.

Head. Frons finely, abundantly rugose-punctate, except smooth triangular plate close to clypeus; with grayish-white pubescence not obscuring integument (whiter depending on light intensity), with triangular plate glabrous. Area between antennal tubercles and beginning of upper eye lobes finely, abundantly punctate; with short, sparse, bristly grayish-white setae (whiter depending on light intensity), sparser toward upper eye lobes; remaining surface of vertex and superior area behind upper eye lobes finely, densely punctate (punctures partially confluent behind eyes), except almost smooth narrow central area of vertex, widely, triangularly expanded close to prothorax; with a few minute grayish-white setae between upper eye lobes, glabrous on remaining surface. Remaining surface of area behind upper eye lobes smooth and glabrous; smooth behind lower eye lobes close to superior $\frac{2}{3}$ of eye, finely sparsely punctate on inferior third close to eye, coarse, densely punctate on entire area close to prothorax; with a few short yellowish-brown setae close to eye on inferior third, remaining surface glabrous. Genae finely, somewhat abundantly punctate close to eye, apex smooth (this area widened toward clypeus); with short, sparse grayish-white setae on punctate area (whiter depending on light intensity). Median



Figures 10–16. *Gortonia sumideroensis*, holotype male. **10)** Dorsal habitus. **11)** Ventral habitus. **12)** Lateral habitus. **13)** Head, frontal view. **14)** Pronotal sculpturing. **15)** Elytral sculpturing in anterior quarter. **16)** Elytral sculpturing in middle area.

groove distinct from clypeus to area between antennal tubercles. Antennal tubercles finely, abundantly punctate with apex smooth; with short, decumbent, sparse yellowish-brown setae, impunctate area glabrous. Postclypeus finely, somewhat sparsely punctate on wide central area, smooth laterally; with short, bristly grayish-white setae (whiter depending on light intensity), and a few long, erect setae of same color interspersed on wide central area, impunctate area glabrous. Labrum smooth, glabrous, coplanar with anteclypeus on posterior third, oblique, with long, erect yellowish-white setae directed forward on anterior $\frac{2}{3}$, and short fringe of golden setae on anterior margin. Gula mentum smooth, glabrous on center of posterior $\frac{2}{3}$, striate-punctate, glabrous on sides of posterior $\frac{2}{3}$; depressed, opaque, minutely, abundantly punctate, with grayish-white pubescence, and long erect setae of same color interspersed on anterior third. Distance between upper eye lobes 0.54 times length of scape (0.30 times distance between outer margins of eyes); in frontal view, distance between lower eye lobes 0.94 times length of scape (0.52 times distance between outer margins of eyes). Antennae 2.1 times elytral length, reaching elytral

apex about middle of antennomere VIII. Scape finely, abundantly punctate dorsally and laterally, apex of dorsal surface smooth, sides of apical area sparsely punctate, ventrally sparsely punctate; with short, abundant, brownish setae on punctate area of dorsal and lateral surfaces, with a few short, erect grayish-white setae interspersed dorsally, sparse brownish setae throughout and a few long, erect grayish-white setae near apex ventrally. Pedicel with sparse brownish pubescence. Antennomeres finely, abundantly punctate with apex smooth; with brownish pubescence not obscuring integument, with a few short erect yellowish setae dorsally, and long, erect, abundant dark setae ventrally. Antennomere IV finely, abundantly punctate except smooth apex (punctures shallower than on III), with sparse yellowish-white pubescence, and long, erect dark setae ventrally (dark setae distinctly sparser than on III). Remaining antennomeres with yellowish-white pubescence, somewhat denser toward XI, and short, erect, sparse yellowish setae throughout (erect setae longer on V–VI). Antennal formula (ratio) based on length of antennomere III: scape = 0.56; pedicel = 0.10; IV = 0.98; V = 0.97; VI = 1.06; VII = 1.10; VIII = 1.04; IX = 0.95; X = 0.85; XI = 1.01.

Thorax. Prothorax as long as wide; sides uniformly rounded. Pronotum finely, sparsely punctate (Fig. 14), except smooth central area; glabrous, except a few short yellowish setae on sides of posterior area. Sides of prothorax finely, sparsely punctate, with short, sparse grayish-white setae close to pronotum, coarser, abundantly punctate, with abundant, bristly grayish-white setae toward prosternum (setae gradually denser and longer toward prosternum), except subsmooth area close to anterior margin (this area gradually widened toward prosternum). Prosternum—finely, sparsely punctate on posterior half, minutely, transversely striate on anterior half; with both short and long, grayish-white setae, denser laterally. Prosternal process with short, sparse grayish-white setae anteriorly, denser posteriorly; narrowest area 0.4 times width of procoxal cavity. Mesoventrite with short, sparse grayish-white pubescence centrally, denser, longer laterally. Mesanepisternum, mesepimeron, and metanepisternum with abundant, bristly grayish-white setae. Mesoventral process abruptly elevated basally; with sparse grayish-white pubescence basally which is denser and longer posteriorly; narrowest area 0.7 times width of mesocoxal cavity. Metaventricle with both short and long, abundant grayish-white setae, sparser toward glabrous central area. Scutellum minutely, sparsely punctate basally, smooth on remaining surface; with a few minute grayish-white setae basally, glabrous on smooth area. **Elytra.** Coarsely, densely punctate throughout, punctures sparser anteriorly (Fig. 15) than on remaining surface (Fig. 16); with long, suberect, abundant yellowish-brown setae throughout (appearing to be darker due to integument color), except posterior area with thicker, longer black setae; apices individually rounded. **Legs.** Profemora subfusiform, finely, very sparsely punctate, with short, decumbent, very sparse grayish-white setae dorsally and laterally, setae longer and bristly ventrally. Mesofemora subpedunculate, arched on basal third; finely, sparsely punctate; with sparse, grayish-white setae dorsally and laterally, slightly longer and more abundant ventrally (setae yellower toward apex). Metafemora slightly arched on anterior quarter; finely, abundantly punctate throughout; setae as on mesofemora, but yellower just after base. Protibiae with a few short yellowish-white setae dorsally and laterally, and dense, bristly yellowish-brown setae ventrally; meso- and metatibiae with sparse yellowish-white setae dorsally and laterally, dense, yellowish-brown ventrally on apex of mesofemora, dense, dark brown on apex of metafemora; meso- and metafemora with long, erect, thick black setae ventrally. Metatarsomere I 1.4 times longer than II+III, about 0.38 times length of metatibiae; metatarsomere II 0.46 times length of I; metatarsomere V 0.56 times length of I.

Abdomen. Ventrites with both short and long grayish-white setae, more abundant laterally, except glabrous apex of I–IV. Ratio of ventrites, based on V: I (including abdominal process), 1.95; II = 1.00; III = 0.86; IV = 0.86.

Dimensions in mm (holotype male). Total length, 9.80; prothoracic length, 1.80; anterior prothoracic width, 1.40; posterior prothoracic width, 1.75; maximum prothoracic width, 1.85; humeral width, 2.00; elytral length, 6.80.

Type material. Holotype male from MEXICO, Chiapas: Sumidero Canyon, near Tuxtla Gutiérrez, 4,000 ft., 6–8.II.1986, J.E. Wappes col. (FSCA, formerly ACMT).

Etymology. Named for El Sumidero Canyon, Chiapas, Mexico where the holotype was collected.

Remarks. According to Hovore (1987): “The elongate, cylindrical form, long posterior legs, long, slender antennae, smooth, unarmed prothorax, and metallic elytra distinguish *Gortonia* from all other purpuricenine genera.” In fact, only the smooth prothorax allows separating *Gortonia* from *Ischnocnemis* Thomson, 1864. Among the species currently included in *Ischnocnemis*, there are species with metallic elytra, and the length of the metatarsomere

I is variable. Thus, the separation and hence the validity of these two genera is questionable. Even so, without a revisionary study of *Ischnocnemis* (which is beyond the scope of this descriptive paper), to be sure about the eventual synonymy, we prefer to leave them here as separate genera. The separation between *Gortonia* and *Parabatyle* Casey, 1912 is also problematic, because all or nearly all features defining the former are also present in the latter. The only reliable difference found is the elytral apex truncate in *Parabatyle* and rounded in *Gortonia*.

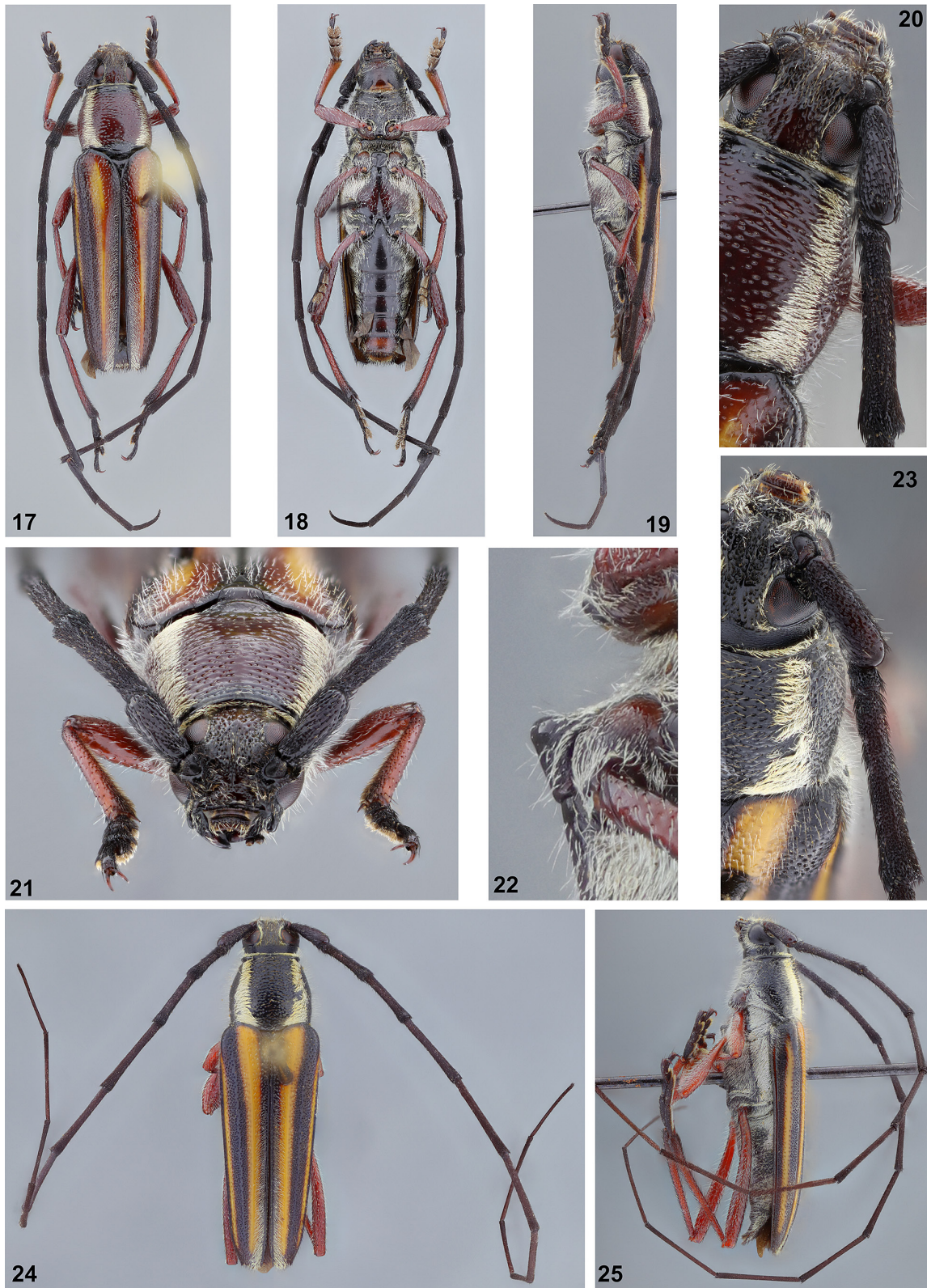
Gortonia sumideroensis differs from *G. linsleyi* Hovore, 1987 by the elytral sculpturing and pubescence less dense. In male of *G. linsleyi*, the elytral sculpturing and pubescence are denser (see photograph on Bezark 2020). Additionally, all known specimens of *G. linsleyi* have the prothorax primarily reddish-orange versus entirely dark in *G. sumideroensis*. According to the original description, the distance between upper eye lobes in the male of *G. linsleyi* is equal to “about the diameter of antennal scape.” In *G. sumideroensis*, the distance is greater (about 1.2 times maximum diameter of the scape).

***Sphaenothecus vandenberghii* Wappes and Santos-Silva, new species**

(Fig. 17–22)

Description. Holotype male. Head, most of ventral surface of thorax, inferior region of sides of prothorax dark brown; parts of mouthparts reddish-brown; posterior area of gulamentum gradually reddish-brown toward prothorax; antennae black; pronotum and superior area of sides of prothorax brown, slightly dark reddish-brown toward center of pronotum; elytra with longitudinal yellowish-brown band dorsally, from base to near apex, gradually narrowed toward its apex, and another laterally from anterior eighth to near posterior quarter; with reddish-brown band adjacent to the yellowish-brown dorsal band (between suture and yellowish-brown band), from near base to just before middle; femora dark reddish-brown, slightly darker on posterior region of metafemora; protibiae light reddish-brown; meso- and metatibiae dark reddish-brown, with apex of metatibiae blackish; tarsi black; abdominal ventrites I–III black; abdominal ventrite IV mostly black, with central area slightly lighter; abdominal ventrite V mostly brown, with anterocentral region orangish-brown.

Head. Frons finely, abundantly, partially confluent punctate, except central plate close to clypeus with punctures slightly finer and sparser; with bristly yellowish-brown pubescence not obscuring integument, more abundant and with lighter setae laterally, with long, erect, abundant dark setae interspersed. Vertex coarsely and sparsely punctate, punctures slightly more abundant between antennal tubercles and base of upper eye lobes; with short, bristly yellowish-brown setae between antennal tubercles and base of upper eye lobes, and long, erect brown setae interspersed; with narrow yellowish-white pubescent band laterally, from slightly before upper eye lobes to prothorax, yellower near prothorax; remaining surface of vertex with long, erect, abundant brown setae. Area behind upper eye lobes nearly smooth, glabrous; area behind lower eye lobes smooth on narrow area close to eye, followed by narrow finely punctate area, another narrow smooth area, and wide finely striate area close to prothorax; punctate area with both short and long, erect pale setae, and remaining surface glabrous. Genae finely, sparsely punctate, except smooth apex; with pale setae toward inferior region, more yellowish-brown toward clypeus, both denser close to eye, and long, erect pale setae interspersed, except glabrous smooth area. Area between antennal tubercles and lower eye lobes with thick, erect dark brown setae. Median groove distinct from clypeus to area between antennal tubercles. Antennal tubercles finely, abundantly punctate, except smooth narrow apex; with long, erect, thick dark brown setae on punctate area. Postclypeus transversely carinate on center of wide central area; finely, abundantly punctate; with bristly, yellowish-white setae on wide central area close to frons, and long, erect brown setae on wide central area close to anteclypeus; sides smooth and glabrous. Labrum coplanar with anteclypeus on about posterior third, oblique on remaining surface; finely, abundantly punctate on apical region of coplanar area, with a long, erect pale seta emerging from each puncture, longer laterally; remaining surface nearly glabrous, except small tuft of golden setae on central area of anterior margin. Gulamentum smooth, glabrous on posterior $\frac{2}{3}$, slightly depressed, coarsely, abundantly punctate, with long, erect, pale yellow setae on anterior third. Distance between upper eye lobes 0.57 times length of scape (0.40 times distance between outer margins of eyes); in frontal view, distance between lower eye lobes 0.92 times length of scape (0.64 times distance between outer margins of eyes). Antennae 12-segmented, 2.6 times elytral length, reaching elytral apex at posterior quarter of antennomere VII. Scape coarsely, abundantly punctate, except smooth dorsal apex; with short, abundant dark setae, longer, distinctly more abundant on distal area of ventral surface; with a



Figures 17–25. *Sphaenothecus* spp. 17–22) *Sphaenothecus vandenberghiei*, holotype male. 17) Dorsal habitus. 18) Ventral habitus. 19) Lateral habitus. 20) Antennomere III. 21) Head, frontal view. 22) Mesoventral process. 23–25) *Sphaenothecus bilineatus*, male. 23) Antennomere III. 24) Dorsal habitus. 25) Lateral habitus.

few long, erect, pale yellow setae interspersed. Pedicel and antennomere III finely, densely punctate; pedicel with long dark setae throughout; antennomere III with abundant, more bristly dark pubescence, ventrally, especially toward apex, and a few long, erect dark setae interspersed ventrally. Remaining antennomeres with abundant dark pubescence, slightly longer and bristly apically; antennomeres IV–V with a few long, erect dark setae ventrally. Antennal formula (ratio) based on length of antennomere III: scape = 0.62; pedicel = 0.14; IV = 0.97; V = 1.00; VI = 1.05; VII = 0.97; VIII = 0.93; IX = 0.93; X = 0.83; XI = 0.83; XII = 1.00.

Thorax. Pronotum coarsely striate-punctate on sides of anterior half, coarsely, sparsely punctate on remaining surface, punctures sparser, slightly finer toward center of posterior half, and absent on postero-central area; with wide, dense shining, pale yellow pubescent band on each side (whiter depending on light intensity), from base to apex; with short setae emerging from punctures, yellowish anteriorly, whiter posteriorly. Sides of prothorax coarsely, abundantly punctate (punctures distinctly coarser than on pronotum, especially superiorly); with both short and long pale setae, distinctly denser close to prosternum. Prosternum coarsely, abundantly punctate on posterior $\frac{2}{3}$, transversely striate on anterior third; with erect, abundant pale setae, especially on punctate area. Prosternal process somewhat finely punctate basally, gradually smooth toward apex; with long, erect pale setae laterally, short, and sparse centrally; narrowest area 0.6 times width of procoxal cavity. Mesoventrite with shining, pale yellow pubescence not obscuring integument. Mesanepisternum and mesepimeron with dense, shining pale yellow pubescence obscuring integument (whiter depending on light intensity and viewing angle), and long, erect setae of same color interspersed. Mesoventral process (Fig. 22) about as wide as mesocoxal cavity; with silvery pubescence laterally, with long, erect setae of same color interspersed, nearly glabrous centrally. Metanepisternum and sides of metaventrite with silvery pubescence obscuring integument (anteriorly and posteriorly projected toward central area on metaventrite), and long, erect setae of same color interspersed, remaining surface with long, erect, sparse silvery setae. Scutellum distinctly longer than wide; with a few short yellowish-white setae. **Elytra.** Dorsal yellowish-brown band carinate; surface coarsely, abundantly punctate, except smooth dorsal yellowish-brown band, and central area of lateral yellowish-brown band; apex sinuous, with short spine at outer and sutural angles; area between dorsal carina and suture with yellowish-white pubescence (whiter depending on light intensity), gradually denser toward apex; area close to outer surface of dorsal carina with sparse yellowish-white pubescence (whiter depending on light intensity), distinctly sparser and narrowed toward apex; remaining surface with short, bristly, somewhat thick dark setae, longer on apex. **Legs.** Profemora subfusiform, finely, sparsely punctate; meso- and metafemora subpedunculate, arched on basal third (more so in metafemora), coarsely, abundantly punctate; pro- and mesofemora with sparse yellowish-white setae, denser and longer ventrally, especially on basal $\frac{2}{3}$; metafemora with sparse yellowish-white setae, longer and denser ventrally on basal third, and dark setae on posterior $\frac{2}{3}$ of dorsal surface; metafemora reaching about apex of abdominal ventrite IV. Protibiae with sparse, both short and long yellowish-white setae dorsally and laterally, and dense, bristly yellowish-brown pubescence ventrally, gradually longer toward apex. Mesotibiae with both short and long yellowish-white setae throughout, except apex of ventral surface with dense, long yellowish-brown setae. Metatibiae with long, erect dark setae throughout, denser on apex of ventral surface, and a few long, erect yellowish-white setae interspersed. Metatarsomere I about as long as II+III; metatarsomere II 0.43 times length of I; metatarsomere V about as long as I.

Abdomen. Ventral surface with dense silvery pubescent band laterally, gradually narrowed toward apex of ventrite V, and long, erect setae of same color interspersed; remaining surface of ventrites with short, very sparse silvery setae, and a few long, erect setae close to lateral pubescent band; apex of ventrite V with somewhat abundant dark setae. Ratio of ventrites, based on V: I (including abdominal process), 3.33; II = 1.50; III = 1.33; IV = 1.25.

Dimensions in mm (holotype male). Total length, 10.50; prothoracic length, 2.20; anterior prothoracic width, 1.70; posterior prothoracic width, 2.20; maximum prothoracic width, 2.35; humeral width, 2.80; elytral length, 7.10.

Type material. Holotype male from NICARAGUA, Nueva Segovia: Cerro Jesus, 1,300 m, 13.V.2012, E. van den Berghe col. (FSCA, formerly ACMT).

Etymology. Named for Eric van den Berghe (Zamarano, Honduras), the collector of the holotype, who so kindly provided the specimen to the authors.

Remarks. *Sphaenothecus vandenberghae* new species is similar to *E. bilineatus* (Gory, 1831) (Fig. 23–25), but differs as follows: antennae in male distinctly shorter (Fig. 17); metafemora not reaching elytral apex (Fig. 18–19). In *E. bilineatus*, the antennae (Fig. 24–25) are much longer, and the metafemora reach or slightly surpass elytral apex. It is also similar to *S. maccartyi* Chemsak and Noguera, 1998 (see photograph on Bezark 2020), but differs by the antennae distinctly shorter than twice the body length.

Sphaenothecus vandenberghae can be included in the alternative of couplet “5” from Chemsak and Noguera (1998) (modified):

- 5(4). Antennae 11-segmented; elytral apices with angles unarmed; mesoventral process narrowly rounded at apex; Mexico (Chiapas, Oaxaca), Honduras, Costa Rica . . . ***S. toledo* Chemsak and Noguera, 1998**
 — Antennae 12-segmented; elytral apex strongly dentate at outer angles; mesoventral process broadly rounded at apex **5'**
- 5'(5). Antennae in male longer than twice body length; Mexico (Jalisco, Sinaloa, Chiapas)
 ***S. maccartyi* Chemsak and Noguera, 1998**
 — Antennae in male distinctly shorter than twice body length; Nicaragua
 ***S. vandenberghae* Wappes and Santos-Silva, new species**

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