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Description of a new species of *Xalitla* Lane, 1959 (Cerambycidae: Cerambycinae: Neoibidionini) from western Mexico

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Abstract. The tribal allocation of *Xalitla* Lane, 1959 (Cerambycidae: Cerambycinae) is discussed. *Xalitla limoni* Santos-Silva and Skillman, **new species**, is described from Mexico (Jalisco). *Xalitla lezamai* Galileo and Martins, 2008 is determined to be synonymous with *X. genuina* Martins, 1970 and formally placed in synonymy. A key to the species of *Xalitla*, which includes the new species and synonymy, is provided.

Key words. Central America, longhorned beetles, taxonomy.

Introduction

Frequently, when studying specimens received for identification in the family Cerambycidae, we encounter problems related to the definitions and boundaries of the existing tribes and genera. In fact, it seems to be the norm. The subject of this paper, *Xalitla* Lane, 1959, a small genus of only four species which have much in common, and unquestionably a very close affinity to each other is not particularly problematic. However, this cannot be said for its relationship to many of the other genera assigned to the Neoibidionini, and its placement there. In studying *Xalitla* it became apparent that it could be placed in more than one tribe but none perfectly. A discussion of the higher classification of the subfamily Cerambycinae is well beyond the scope of this paper, however, a more detailed discussion of the history of some of the tribal issues, in properly placing *Xalitla,* and some of the problems with it and its current congeners sharing the same tribe are presented in the discussion below.

Materials and Methods

Photographs were taken in the MZSP with a Canon EOS Rebel T3i DSLR camera, Canon MP-E 65mm 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 stereo microscope, 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
JFLC Juan F. Limón collection, Cypress, California, USA
MZSP Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil

Results

CERAMBYCINAE

NEOIBIDIONINI Monné, 2012

COMPSINA Martins and Galileo, 2007

Xalitla Lane, 1959

Xalitla Lane 1959: 15; Martins 1960: 115; Martins and Chemsak 1966: 457; Martins 1970: 957 (rev.); Monné 1993: 56 (cat.); 2005: 389 (cat.); 2012: 38; 2019: 559 (cat.).

Lane (1959) described *Xalitla* in Ibidionini Thomson, 1861 with *Xalitla azteca* Lane the type species (currently, Neoibidionini Monné, 2012 as Ibidionini Thomson, 1861 was found to be preoccupied). Martins (1960) included *Xalitla* in his key to genera of Ibidionini and reported (translated and paraphrased): "*Xalitla* and *Gourbeyrella* have a strong constriction at the base of the prothorax, with *Xalitla* characterized by the strong punctation of the prothorax and elytra, and with *Gourbeyella* having the pronotum pleated. The inclusion of either in Ibidionini [being proper] seems to us very doubtful." These comments aside, Martins (1967) transferred *Gourbeyrella* to Tillomorphini but left *Xalitla* in Ibidionini. Martins (1970) kept *Xalitla* in Ibidionini, Division V (currently Compsina Martins and Galileo, 2007), and described two new species: *X. genuina*, and *X. punctatissima*. Later, Galileo and Martins (2008) described *X. lezamai*. The presence of *Xalitla* in Neoibidionini is questionable as no other genus in the tribe has coarsely reticulate-punctate pronotum.

This is also problematic as Lacordaire (1868) separated Ibidionini (= Neoibidionini) from Tillomorphini by the size of the ommatidia: coarse in Neoibidionini; fine in Tillomorphini. However, this feature is variable in the genera currently placed in Tillomorphini (as well as in genera of other tribes of Cerambycidae). Accordingly, it cannot be used to separate tribes.

Although the status of the current tribes of Cerambycinae is not the scope of this work, some considerations are necessary to justify the inclusion of *Xalitla* in Neoibidionini, as *Xalitla* can be included in more than one tribe, depending on the features and species chosen.

Neocorini Martins, 2005 was described as follows (translated): "Eyes coarsely faceted; upper eye lobes narrow or absent. Maxillary palpomere I distinctly longer than the others. Scape as long as, or longer than, antennomere III. Antennomere not carinate, not sulcate, often shorter or subequal to IV. Antennomere V distinctly longer than IV. Prothorax longer than wide, rounded and without tubercles laterally, with distinct basal constriction. Procoxal cavities closed behind, not forming lateral angle. Pronotum without tubercles. Mesoventral process emarginated posteriorly, often without articular lateral projection. Mesepimeron very narrow. Mesocoxal cavities closed laterally. Elytra not carinate, often with transverse depression about middle; elytral apex without projections. Meso- and metafemora pedunculate-clavate. Metatibiae not carinate. Parameres individualized." Almost none of these features can really be used to define the genera currently included in the tribe. For example, *Neocoridolon* Melzer, 1930, has antennomere III longer than IV, and outer angle of elytral apex distinctly spiniform; *Fregolia* Gounelle, 1911 has distinct tubercles on pronotum, and elytra also distinctly carinate. Furthermore, it was affirmed that maxillary palpomere I is longer than the other maxillary palpomere segments. However, the drawing of *Neocorus ibidionoides* (Audinet-Serville, 1834), as well as other information in the same work provides very different information (translation): "Maxillary palpi in *Neocorus* with palpomere I very narrow and the shortest." At the same time, these features are present in Tillomorphini making it impossible, on this basis, to separate Neocorini from Tillomorphini Lacordaire, 1868. According to Martins (2005) (translated): "Some genera of Neocorini were placed in Tillomorphini by Monné (1993). Neocorini differs from Tillomorphini especially by the antennal formula [proportion between antennomeres], by eyes and elytra. In Tillomorphini the antennomere III is always longer than IV and is as long as V; the eyes are finely faceted with lower eye lobes at most as long as malar area, and the elytra

are flattened dorsally." However, the proportion between antennomeres is somewhat variable in the genera placed in Neocorini, and may be identical to that in *Tetranodus* Linell, 1896 (which is assigned to Tillomorphini); the eyes in *Tetranodus* are not finely faceted; the elytra in some genera currently placed in Neocorini (*e.g.* some species of *Aleiphaquilon* Martins, 1970) are exactly as in several genera of Tillomorphini, the malar area (genae) is identical to that in many Tillomorphini. Accordingly, we cannot see how to separate Neocorini from Tillomorphini. Also, several of the features used to define the tribe are extremely variable in other tribes. For example, eyes finely or coarsely faceted are present in Acanthoderini, and Eburiini. Lacordaire (1868) separated Graciliini from Anaglyptini Lacordaire, 1868 by the size of ommatidia: coarse, leading to Graciliini; fine, leading to Anaglyptini and Tillomorphini. However, as seen before, this feature is not useful to separate tribes of Cerambycidae. Lacordaire (1868) also separated Anaglyptini from Tillomorphini by the shape of the mesocoxal cavities: open laterally, leading to Anaglyptini; and closed laterally, leading to Tillomorphini. Linsley (1962) also used the size of the ommatidia to separate Graciliini, Tillomorphini, and Anaglyptini. However, the features used by him in his key, at best, are useful only to separate North American species, and are not reliable characters to define these tribes, especially since the features used (size of ommatidia and elytral shape) are too variable within the genera included in them.

For us, *Xalitla*, at least *X. azteca* Lane, 1959, and the new species described here, belong to Tillomorphini. Even so, the separation of Tillomorphini from some other tribes (especially Anaglyptini, Graciliini, and Neocorini), and at least from some genera currently placed in Neoibidionini, remains questionable. Accordingly, provisionally we prefer to keep *Xalitla* in Neoibidionini.

Xalitla limoni Santos-Silva and Skillman, new species

(Fig. 1–5)

Description. Female. Head reddish-brown; mandibles reddish-brown except darkened inferior margin of outer side and black apical quarter; mouthparts reddish-brown except yellowish-brown apex of palpomeres; scape and pedicel orangish-brown; base of antennomere III slightly reddish-brown and remaining surface black; antennomeres IV–VI dark reddish-brown basally, gradually lighter toward apex, irregularly interspersed with blackish areas on anterior 2/3; antennomeres VII–XI mostly reddish-brown, with irregularly slightly darkened portions on central area. Prothorax reddish-brown, with anterior and posterior margins, and area around procoxal cavities blackish; ventral surface of meso- and metathorax reddish-brown, except darkened margins of coxae. Scutellum dark reddish-brown centrally, with margins blackish. Elytra orangish-brown on almost entire basal third, black on remaining surface. Profemora orangish-brown; meso- and metafemora dark reddish-brown, irregularly darker on some areas. Protibiae dark brown, with reddish-brown areas irregularly interspersed; meso- and metatibiae nearly black, with irregular reddish-brown areas interspersed. Pro- and mesotarsomeres I–IV mostly reddish-brown, and pro- and mesotarsomeres V dark brown, except reddish-brown claws (metatarsi missing). Abdominal ventrites black. Erect setae (depending on light intensity and angle) more yellowish-white.

Head. Frons, vertex, and area behind eyes coarsely, abundantly punctate; with minute whitish setae emerging from punctures, except sides of frons with both, short and long, erect white setae emerging from some punctures, and sides of vertex with some long, erect white setae emerging from punctures; area behind antennal insertion with yellowish-white pubescence. Genae 0.68 times length of lower eye lobe; coarsely, abundantly punctate except apex smooth; with both, short and long, erect, sparse white setae, except apex glabrous. Gulamentum smooth, glabrous on posterior half; slightly depressed, coarsely striate-punctate, with short, erect, sparse white setae laterally, and long, erect white setae anteriorly. Postclypeus coarsely, shallowly punctate on wide central area (punctures distinctly finer than on frons), smooth laterally; with moderately long, erect, sparse white setae on punctate area, glabrous laterally, and with very long, erect white setae on each side of wide central area. Labrum with long, erect, sparse yellowish setae directed forward. Antennal tubercles gradually elevated from anterior area, then abruptly inclined posteriorly, with apex rounded; coarsely, shallowly punctate basally, smooth posteriorly; with a few short, nearly erect white setae on punctate area. Outer side of mandibles with long, erect, thick white setae on anterior half. In frontal view, distance between lower eye lobes 1.4 times length of scape (0.67 times distance between outer margins of eyes). Antennae 1.27 times elytral length, almost reaching

posterior quarter of elytra. Scape slightly, gradually widened in basal third, nearly parallel-sided in posterior 2/3; with short, sparse, decumbent white setae dorsally, and long, erect, sparse white setae throughout. Pedicel with long, erect, sparse white setae throughout. Antennomere III with short, decumbent white pubescence on outer surface, absent on remaining surface, and long, erect, moderately sparse white setae throughout; antennomeres IV–XI with white pubescence not obscuring integument, more bristly dorsally on VI–XI, distinctly sparser on IV–V, especially ventrally, long, erect, sparse white setae ventrally, and a few long, erect white setae on dorsal apex of IV–V; and in lateral view, antennomere III arched. Antennal formula (ratio) based on antennomere III: scape = 0.53; pedicel = 0.13; IV = 0.26; V = 0.47; VI = 0.51; VII = 0.44; VIII = 0.35; IX = 0.30; X = 0.27; XI = 0.38.

Thorax. Prothorax distinctly longer than wide, arched in lateral view, anterior and posterior constrictions well-marked. Pronotum coarsely, densely punctate, deeper, partially confluent on each side of area of posterior constriction, less distinct on center of area of posterior constriction; part of punctures with minute white setae; with long, erect white setae distinctly more abundant laterally. Sides of prothorax coarsely, abundantly punctate on wide central area, smooth anteriorly (this area gradually, distinctly widened toward prosternum), smooth posteriorly except striate area close to procoxal cavity; with long, erect, abundant white setae on punctate area, glabrous anteriorly and posteriorly. Prosternum coarsely, abundantly punctate on posterior 2/3 (punctures confluent close to procoxal cavities), somewhat rugose-punctate on narrow area close to anterior margin, slightly striate on remaining surface; with long, erect, white setae on posterior 2/3 and narrow anterior area. Prosternum strongly narrowed centrally. Mesoventrite somewhat depressed on wide anterocentral area, distinctly obliquely elevated toward mesoventral process; depressed area finely rugose-punctate, coarsely, sparsely punctate toward mesoventral process, smooth laterally; depressed area with minute, sparse yellowish-white pubescence; punctate area with long, erect, sparse white setae; smooth area glabrous. Mesoventral process with distinct tab at each side of apex. Mesanepisternum coarsely, abundantly punctate; nearly glabrous superiorly, with wide, dense white pubescent band close to mesepimeron. Metanepisternum glabrous on anterior 2/3, with dense white pubescence on posterior third. Metaventrite coarsely, moderately sparsely punctate, with dense white pubescence on each side of posterior third close to metanepisternum. Scutellum with dense white pubescence. **Elytra.** Coarsely, abundantly punctate on anterior 3/4, punctures finer, slightly sparser on posterior quarter; with long, erect white setae, slightly more abundant on posterior third; apex rounded. **Legs.** Femora pedunculate-clavate (peduncle gradually longer from profemora to metafemora); with long, erect, sparse white setae. Tibiae with long, erect, abundant white setae dorsally; with yellowish-white bristly pubescence ventrally (yellower near apex), gradually denser toward apex, with long, erect white setae interspersed.

Abdomen. Ventrites finely, sparsely punctate; with both, short and long, erect, sparse white setae. Apex of ventrite V rounded.

Dimensions in mm. Total length, 6.10; prothoracic length, 1.45; anterior prothoracic width, 1.05; posterior prothoracic width, 0.90; maximum prothoracic width, 1.10; humeral width, 1.35; elytral length, 3.65.

Type material. Holotype female from MEXICO, JALISCO: 2.5–5 km W José María Morelos, 7.VII.2018, F. Skillman and J. Limón col. (deposited in FSCA, formerly FWSC); Paratype female, same data except: 2 km W. on Rd to beach (JFLC).

Etymology. Named for Juan Francisco Limón, good friend and avid cerambycid collector with whom the second author has shared numerous forays into the bush in search of new or unknown species.

Remarks. *Xalitla limoni* sp. nov. is similar in appearance to the female of *X. azteca* Lane, 1959 (Fig. 6–9), but differs as follows: body stouter (Fig. 1); peduncle of profemora short (Fig. 2); eyes distinctly smaller (Fig. 5). In *X. azteca*, the body is slimmer (Fig. 6), peduncle of profemora is longer (Fig. 7), and eyes are distinctly larger (Fig. 9). The holotype is glued on a card-triangle with non-soluble glue. Thus, it was not possible to remove the insect from the card, due to the risk of damaging the specimen, to examine the metaventrite in detail.

Xalitla genuina Martins, 1970

(Fig. 10–23)

Xalitla genuina Martins 1970: 961; Chemsak et al. 1992: 53 (checklist); Monné 1993: 56 (cat.); Monné and Giesbert 1994: 81 (checklist); Noguera and Chemsak 1996: 400 (checklist); Turnbow et al. 2003: 13 (distr.); Monné 2005: 389 (cat.); Hovore 2006: 373 (distr.); Monné and Hovore 2006: 100 (checklist); Swift et al. 2010: 22 (distr.); Noguera et al. 2012: 621 (distr.); Cervantes Mayagoitia and Huacuja Zamudio 2017: 167 (host); Noguera et al. 2017: 8 (distr.); Monné 2019: 559 (cat.).

Xalitla lezamai Galileo and Martins 2008: 51; Monné et al. 2017: 26 (holotype); Monné 2019: 560 (cat.). **Syn. nov.**

Martins (1970) described *Xalitla genuina* from Mexico (Oaxaca and Chiapas), based on two males and one female. Later, Monné and Giesbert (1994) recorded it from Costa Rica, Turnbow et al. (2003) from Honduras, and Hovore (2006) from Guatemala.

Galileo and Martins (2008) described *Xalitla lezamai* based on a single male from Costa Rica and reported (translated): "*Xalitla lezamai* sp. nov. is similar to *X. genuina* Martins, 1970 by the color pattern and punctation of the integument. It differs by the antennomere III carinate on base, and by the elytra with row of asperous punctures on sides of suture. In *X. genuina*, the antennae in male have no carina on antennomere III, and the elytra have no asperous punctures close to suture." However, the differential features pointed out are present in the paratype of *X. genuina*. The basal carina of the antennomere III is variable: it may be absent, present on extreme base (as in the paratype of *X. genuina*), or present on about basal third (as in the holotype of *X. lezamai*). Furthermore, the asperous punctures along suture are present in the paratype male of *X. genuina*, although they are somewhat sparser than in the holotype of *X. lezamai*. Accordingly, we are synonymizing *X. lezamai* with *X. genuina*.

Material examined. MEXICO, *Chiapas*: 31 mi. SE Comitán, paratype male of *Xalitla genuina*, 18–19. VI.1965, H.R. Burke, J.R. Meyer and J.C. Schaeffner col. (MZSP). HONDURAS, *Francisco Morazán*: Zamarano Central (14°00′N, 87°00′W; MV/UV lights; 2,600 ft), 1 male, 1 female, 24–28.IV.2017, E. van den Berghe col. (ACMT); (14°20′N, 87°00′W; MV/UV lights; 2,600 ft), 1 male, 16–17.V.2017, E. van den Berghe col. (ACMT). COSTA RICA, *Guanacaste*: La Pacifica "nr Canas", holotype male of *Xalitla lezamai*, 20–21.V.1985, F.T. Hovore col. (MZSP).

Key to species of *Xalitla*

(female of *X. punctatissima* unknown; male of *X. limoni* new species unknown)

1. Antennomere III distinctly tumid; males **2**
— Antennomere III filiform; females **4**

2(1). Elytra bicolorous (Fig. 10, 11, 16); Mexico (Sonora, Jalisco, Nayarit, Guerrero) . . . . . ***X. azteca* Lane, 1959**
— Elytra uniformly dark brown (Fig. 12, 14) **3**

3(2). Antennae not reaching elytral apex; antennomere IV slightly longer than half of antennomere V; Mexico (Sinaloa, Sonora) . . . . . ***X. punctatissima* Martins, 1970**
— Antennae distinctly surpassing elytral apex; antennomere IV slightly shorter than V; Mexico (Oaxaca, Chiapas), Guatemala, Honduras, Costa Rica (Fig. 12–15) . . . . . ***X. genuina* Martins, 1970**

4(1). Elytra uniformly dark brown (Fig. 19–23) . . . . . ***X. genuina* Martins, 1970**
— Elytra bicolorous **5**

5(4). Eyes distinctly longer than gena (Fig. 9) . . . . . ***X. azteca* Lane, 1959**
— Eyes slightly longer than gena (Fig. 5) . . . . . ***X. limoni* Santos-Silva and Skillman, new species**

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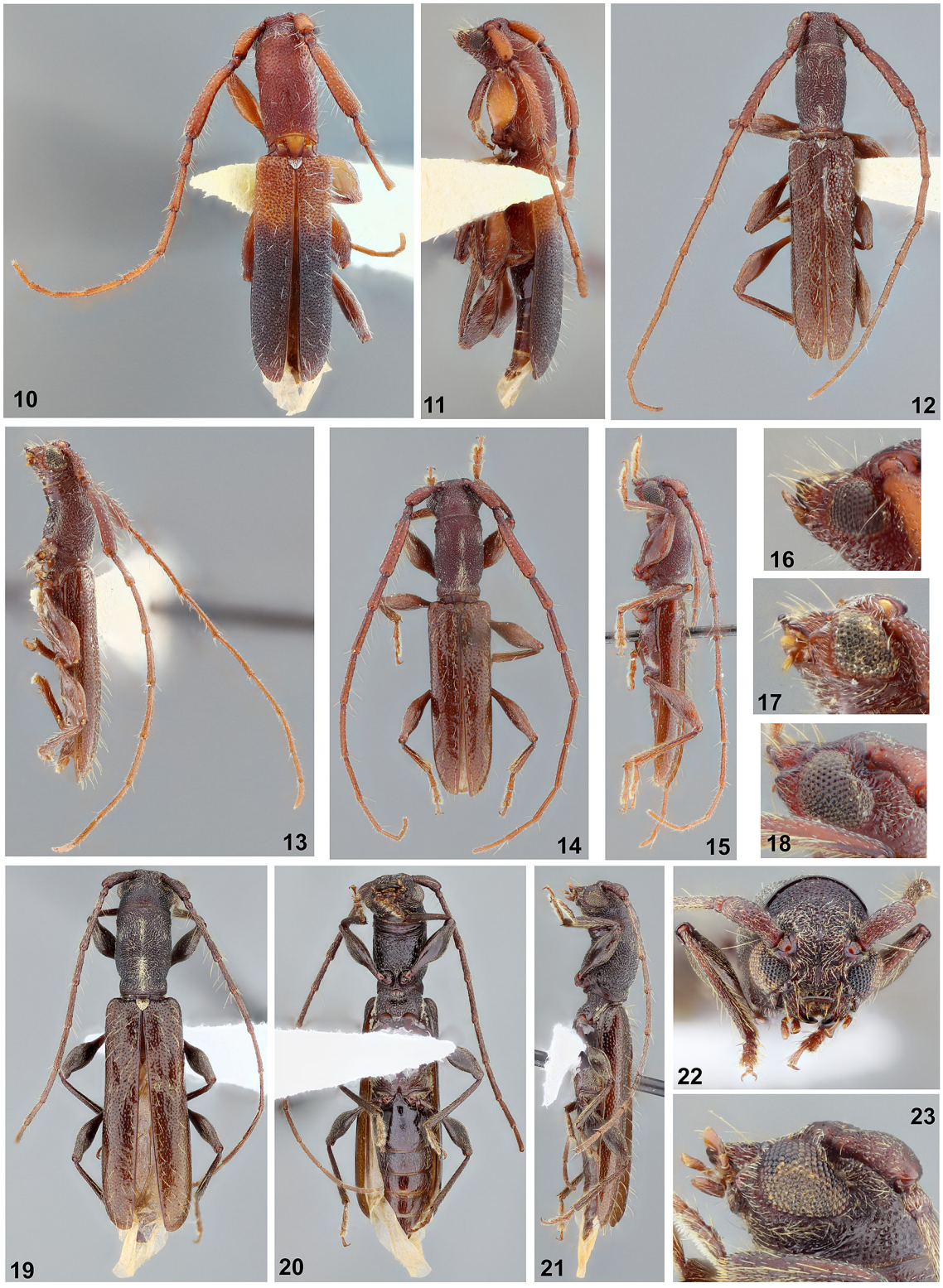
Figures 1–9. *Xalitla* species**. 1–5)** *Xalitla limoni*, holotype female. **1)** Dorsal habitus. **2)** Ventral habitus. **3)** Lateral habitus. **4)** Head, frontal view. **5)** Head, lateral view. **6–9)** *Xalitla azteca*, holotype female. **6)** Dorsal habitus. **7)** Ventral habitus. **8)** Lateral habitus. **9)** Head, lateral view.



Figures 10–23. *Xalitla* species. **10–11)** *Xalitla azteca*, male. **10)** Dorsal habitus. **11)** Lateral habitus. **12–13)** *Xalitla genuina*, paratype male. **12)** Dorsal habitus. **13)** Lateral habitus. **14–15)** *Xalitla lezamai*, holotype male. **14)** Dorsal habitus. **15)** Lateral habitus. **16–18)** Eyes, side view, male. **16)** *Xalitla azteca*. **17)** *Xalitla genuina*, paratype. **18)** *Xalitla lezamai*, holotype. **19–23)** *Xalitla genuina*, female. **19)** Dorsal habitus. **20)** Ventral habitus. **21)** Lateral habitus. **22)** Head, frontal view. **23)** Head, side view.