

Taxonomy and systematics

New species of *Telegeusis* (Coleoptera: Telegeusidae) from northern Mexico

Especies nuevas de Telegeusis (Coleoptera: Telegeusidae) del norte de México

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Abstract

The genus *Telegeusis* Horn is the most diverse of the family Telegeusidae, with 16 described species, most of them distributed in Mexico (13 species). Herein, we describe 4 new species based on material collected from Tamaulipas, Mexico: *T. cieloensis* sp. nov., *T. estebani* sp. nov., *T. flavafusca* sp. nov., and *T. luismartinezi* sp. nov. Distinguishing characters from closely related species are given and discussed, and the key for the species of the genus is updated.

Keywords: Telegeusids; Neotropical region; Taxonomy; Coloration

Resumen

El género *Telegeusis* Horn es el más diverso dentro de la familia Telegeusidae, con 16 especies descritas, muchas de ellas distribuidas en México (13 especies). En el presente trabajo, describimos 4 especies nuevas con base en material colectado de Tamaulipas, México: *T. cieloensis* sp. nov., *T. estebani* sp. nov., *T. flavafusca* sp. nov. y *T. luismartinezi* sp. nov. Se proporcionan y analizan los caracteres diagnósticos de especies estrechamente relacionadas, y se actualiza la clave para las especies del género.

Palabras clave: Telegeúsidos; Región Neotropical; Taxonomía; Coloración

Introduction

The small family Telegeusidae (Coleoptera: Elateroidea) contains 23 species distributed in 5 genera: *Telegeusis* Horn (16 spp.), *Pseudotelegeusis* Wittmer (4 spp.), *Pseudokarumia* Pic (1 sp.), *Stenodrilus* López-Pérez & Zaragoza-Caballero (1 sp.), and *Platydrilus* López-Pérez & Zaragoza-Caballero (1 sp.) (López-Pérez & Zaragoza-Caballero, 2021). In Mexico 17 species and 4 genera have been recorded (López-Pérez & Zaragoza-Caballero, 2021; Zaragoza-Caballero, 2008, 2015), becoming the most diverse country for the family.

Telegeusidae are easily recognized by their remarkably long apical labial and maxillary palpomeres (Lawrence, 2010; Miller, 2002). Only males have been described, and little is known about the ecology and biology of immature stages (Lawrence, 2010). Commonly, adult specimens are collected with light traps or interception traps (e.g., Malaise) (López-Pérez & Zaragoza-Caballero, 2021; Zaragoza-Caballero, 2008, 2015; Zaragoza-Caballero & Rodríguez-Vélez, 2011). The taxonomic position of Telegeusidae within Elateroidea has been controversial, placing them either as a subfamily of Oemethidae or as an independent family (Kundrata et al., 2014; López-Pérez & Zaragoza-Caballero, 2021; Ramsdale, 2010). Herein we treat them as a family.

Species of *Telegeusis* Horn, 1895 are recognized by their labial palpi 2-3 segmented, last palpomere greatly enlarged and elongated, similar to maxillary palpi; and antennae filiform (Ivie, 2002). The 16 currently recognized species are distributed from southern USA to Panama, with 13 species recorded for Mexico (Zaragoza-Caballero, 2008, 2015; Zaragoza-Caballero & Rodríguez-Vélez, 2011). The length of last maxillary and labial palpi, length of elytra, and integument coloration have been used to separate species within the genus (Zaragoza-Caballero, 2015; Zaragoza-Caballero & Rodríguez-Vélez, 2011). In this work, we describe 4 new species of *Telegeusis* from Mexico and update the key for the species.

Materials and methods

Specimens studied were collected with a blacklight and Malaise traps in El Cielo Biosphere Reserve, Tamaulipas, Mexico. The morphological terminology and classification are based on Ivie (2002), Zaragoza-Caballero (2015), and Zaragoza-Caballero and Rodríguez-Vélez (2011). Morphological structures were studied using a Zeiss Stemi DV-4 stereomicroscope. Measurements are in millimeters. Photographs were taken with a Zeiss® AxioZoom V16 stereomicroscope, with a Zeiss® AxioCam MRc5, 5 megapixels camera, controlled by ZEN

(Zeiss Efficient Navigation) application. Specimens are deposited in the Colección de Insectos, UAEM, Morelos, Mexico (CIUM), and the Colección Nacional de Insectos, Instituto de Biología, UNAM, CDMX, Mexico (CNIN). All label data were transcribed verbatim as appearing on the respective labels.

Descriptions

Telegeusis Horn, 1895

Telegeusis cieloensis sp. nov.

(Fig. 1A-E)

<http://zoobank.org/urn:lsid:zoobank.org:act:B3E0A56B-C7C9-4E7F-9603-4BCC422E65E6hich>

Diagnosis. Similar to *T. debilis* Horn, 1895 but differing in the length of head which is slightly longer than wide (twice longer than wide in *T. debilis*); maxillary and labial palpi slightly longer than antennae (shorter than antennae in *T. debilis*); elytra reaching posterior third of abdomen (reaching the middle in *T. debilis*).

Holotype male (CNIN). Size: length 4.1 mm; width 0.75 mm. Color: head, base of elytra and legs yellowish brown; meso and metaventrite orange; antennae, pronotum, posterior part of elytra and abdomen reddish brown; apical palpomeres brown. Head: flat, 1.2 times longer than wide, at eye level, distance between outer margins of eyes slightly wider than pronotum (0.62 mm). Interocular area convex, forming pronounced gibba centrally (Fig. 1C). Distance between eyes and pronotum 0.85 times the length of eye. Integument shiny, shagreened, finely punctate; each puncture with an erect, yellow seta; setae longer behind eyes; with strongly deep tentorial pits. Antennal tubercles prominent, convex (Fig. 1C). Inter-antennal area concave, 2.25 times as wide as length of scape. Antennae longer (1.2 mm) than last maxillary palpomere (1.05 mm) (Fig. 1A, B); scape slightly widened. Eyes prominent, slightly longer (0.18 mm) than wide (0.15 mm); interocular distance 3.3 times width of eyes. Frons concave, anterior margin concave. Clypeus with margin slightly sinuous. Maxillary and labial palpi with 3 and 2 palpomeres, respectively (Fig. 1D). Thorax: pronotum wider (0.62 mm) than long (0.45 mm), width less than length of head (Fig. 1A, C); anterior margin straight, posterior margin convex, sides slightly constricted at middle; disk glossy, convex centrally, with 1 elongated gibbosity on each side; integument finely, sparsely punctate, with erect, sparse orange setae. Scutellum shiny, finely punctate, with sparse setae, posterior margin truncate. Elytra 6.45 times as long as wide (base width) (Fig. 1A), subparallel on basal half, then becoming narrower toward rounded apex; integument coarsely punctate, granulate on posterior third; each puncture with an erect, yellow seta.

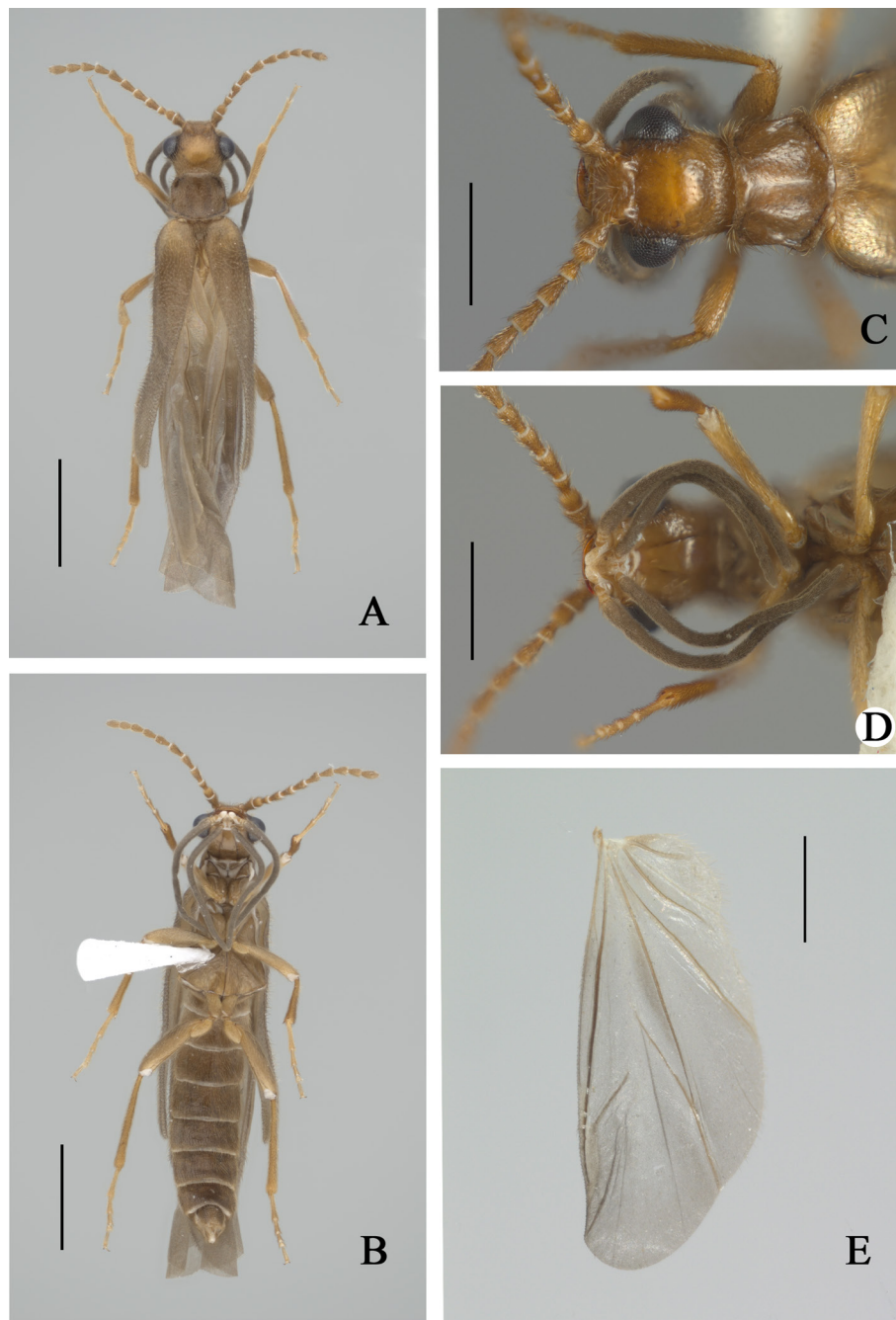


Figure 1. *Telegeusis cieloensis* sp. nov., holotype male: A) dorsal habitus; B) ventral habitus; C) head, dorsal view; D) palpi, ventral view; E) paratype, metathoracic wing. Scale bars = 1 mm (A-B, E); 0.5 mm (C-D).

Metathoracic wings 2.35 times longer than wide (Fig. 1E), anterior radial vein (RA) well sclerosed, posterior radial 2 (PR2) present, cubital 2 (CU2) slightly curved, elongated. Legs finely punctate, with dense yellow setae, yellowish-brown on apical half of tibiae. Coxae conical; procoxae long. Trochanters elongate. Femora fusiform,

flattened; metafemora longer and wider (Fig. 1A, B). Tibiae elongate, with 2 apical spines; metatibia longer and slightly widened toward apex. Tarsomere I shorter in length than II-IV together; claws simple. Abdomen: shiny, integument shagreened with fine punctures, each puncture with an erect, yellow seta (Fig. 1B).

Variation. The type material varies in total length from 4.08 to 5.86 mm, and in width from 0.7 mm to 0.93 mm.

Taxonomic summary

Etymology. The specific epithet is derived from El Cielo Biosphere Reserve where the holotype was collected, combined with the Latin suffix *-ensis*, meaning belonging to.

Type material. Holotype male: Mexico: Tamaulipas, Gómez Farías, Reserva de la Biosfera El Cielo, Malaise trap, 23°08'01.1" N, 99°13'11.6" W, 19/Abril/2021, 1,600 m snm, M. Janda et al. leg. (CNIN). Paratypes. Same data as holotype except: 23°05'56.2" N, 99°12'17.1" W, 31/Enero/2020, 1,200 m snm (CNIN, 1); 23°08'09.4" N, 99°12'53.1" W, 01/Septiembre/2020, 1,800 m snm (CNIN, 2); 23°05'56.2" N, 99°12'17.1" W, 16/Septiembre/2020, 1,200 m snm (CIUM, 2); light trap, 23°05'16.5" N, 99°11'59.6" W, 10/Octubre/2020, 1,200 m snm (CNIN, 1); light trap, 23°07'39.3" N, 99°12'30.6" W, 10/Octubre/2020, 1,400 m snm (CIUM, 2); 23°05'56.2" N, 99°12'17.1" W, 10/Diciembre/2020, 1,200 m snm (CIUM, 1); 23°05'56.2" N, 99°12'17.1" W, 19/Abril/2021, 1,200 m snm (CNIN, 1); 23°08'01.1" N, 99°13'11.6" W, 19/Abril/2021, 1,600 m snm (CNIN, 1); 23°08'01.1" N, 99°13'11.6" W, 05/Mayo/2021, 1,600 m snm (CNIN, 1); light trap, 23°09'05.3" N, 99°12'53.8" W, 17/Julio/2021, 1,400 m snm (CNIN, 1).

Telegeusis estebani sp. nov.

(Fig. 2A-E)

<http://zoobank.org/urn:lsid:zoobank.org:act:836B50C3-C5CC-4DED-987F-A7886C1F3D69>

Diagnosis. Similar to *T. moroni* Zaragoza-Caballero, 2015 determined by the color and length of maxillary palpi, but it differs with prominent eyes (small in *T. moroni*); and with 2 labial palpomeres (3 in *T. moroni*). The species also resembles *T. cieloensis* sp. nov. but differs mainly by a darker coloration (lighter in *T. cieloensis*), and the length of elytra, just surpassing the middle of elytra (reaching last third in *T. cieloensis*).

Holotype male (CNIN). Size: length 5.1 mm; width 0.92 mm. Color: mostly brown; somewhat orangish-brown on frons and vertex; antennae orangish brown; pedicel, meso-, metaventrite, scutellum and legs orange; apical palpomeres dark brown. Head: flat, 1.1 times longer than wide, at eye level, distance between outer margins of eyes slightly wider than pronotum (0.7 mm). Interocular area slightly convex, forming small gibba (Fig. 2C). Distance between eyes and pronotum 0.92 times length of eye. Integument shiny, shagreened, finely punctate; each puncture with an erect, orange seta; setae longer around eyes; with conspicuous tentorial pits. Antennal tubercles

prominent, slightly convex (Fig. 2C). Inter-antennal area concave; 2.75 times as wide as length of scape. Antennae just longer (1.65 mm) than last maxillary palpomere (1.57 mm) (Fig. 2A, B); scape somewhat prominent. Eyes prominent, longer (0.27 mm) than wide (0.2 mm); interocular distance 2.9 times width of eyes. Frons slightly concave, anterior margin concave. Clypeus with margin slightly sinuous. Maxillary and labial palpi with 3 and 2 palpomeres, respectively (Fig. 2D). Thorax: pronotum wider (0.76 mm) than long (0.58 mm), width less than length of head; anterior margin straight, posterior margin convex, sides strongly constricted at middle; disk glossy, convex centrally (strongly convex on anterior half), with 1 elongated gibbosity on each side; integument finely, sparsely punctate, with erect, sparse orange setae. Scutellum shiny, finely punctate, with sparse setae, posterior margin truncate. Elytra 6.3 times as long as wide (base width) (Fig. 1A), subparallel on anterior 2/3, slightly constricted about this area, becoming narrower towards rounded apex, reaching apex of abdominal ventrite IV; integument coarsely punctate, strongly granulate on posterior third; each puncture with an erect, orange seta. Metathoracic wings 2.2 times longer than wide (Fig. 2E), anterior radial vein (RA) narrowed, cubital 2 (CU2) curved centrally. Legs finely punctate, with dense orange, orange-brown setae. Coxae conical. Trochanters elongate. Femora fusiform, flattened; metafemora slightly longer (Fig. 2A, B). Tibiae elongate, with 2 apical spines: metatibia slightly longer. Tarsomere I shorter in length than II-IV together; claws simple. Abdomen: shiny, integument shagreened with fine punctures, each puncture with an erect, orange seta, slightly sparser at middle (Fig. 2B).

Variation. Type material varies in total length from 4.38 mm to 5.68 mm, and in width from 0.78 mm to 1.0 mm.

Taxonomic summary

Etymology. This species is named after our friend Esteban Berrones from Alta Cima, El Cielo Biosphere Reserve, for his dedication to protect the biodiversity of El Cielo.

Type material. Holotype male: Mexico: Tamaulipas, Gómez Farías, Reserva de la Biosfera El Cielo, Malaise trap, 23°05'56.2" N, 99°12'17.1" W, 19/Abril/2021, 1,200 m snm, M. Janda et al. leg. (CNIN). Paratypes. Same data as holotype except: 23°07'48.6" N, 99°12'44.3" W, 01/Septiembre/2020, 1,400 m snm (CIUM, 1); 23°05'56.2" N, 99°12'17.1" W, 19/Abril/2021, 1,200 m snm (CNIN, 2); 23°07'48.6" N, 99°12'44.3" W, 04/Junio/2021, 1,400 m snm (CIUM, 1); light trap, 23°05'02.0" N, 99°11'50.4" W, 17/Julio/2021, 1,200 m snm (CNIN, 1).

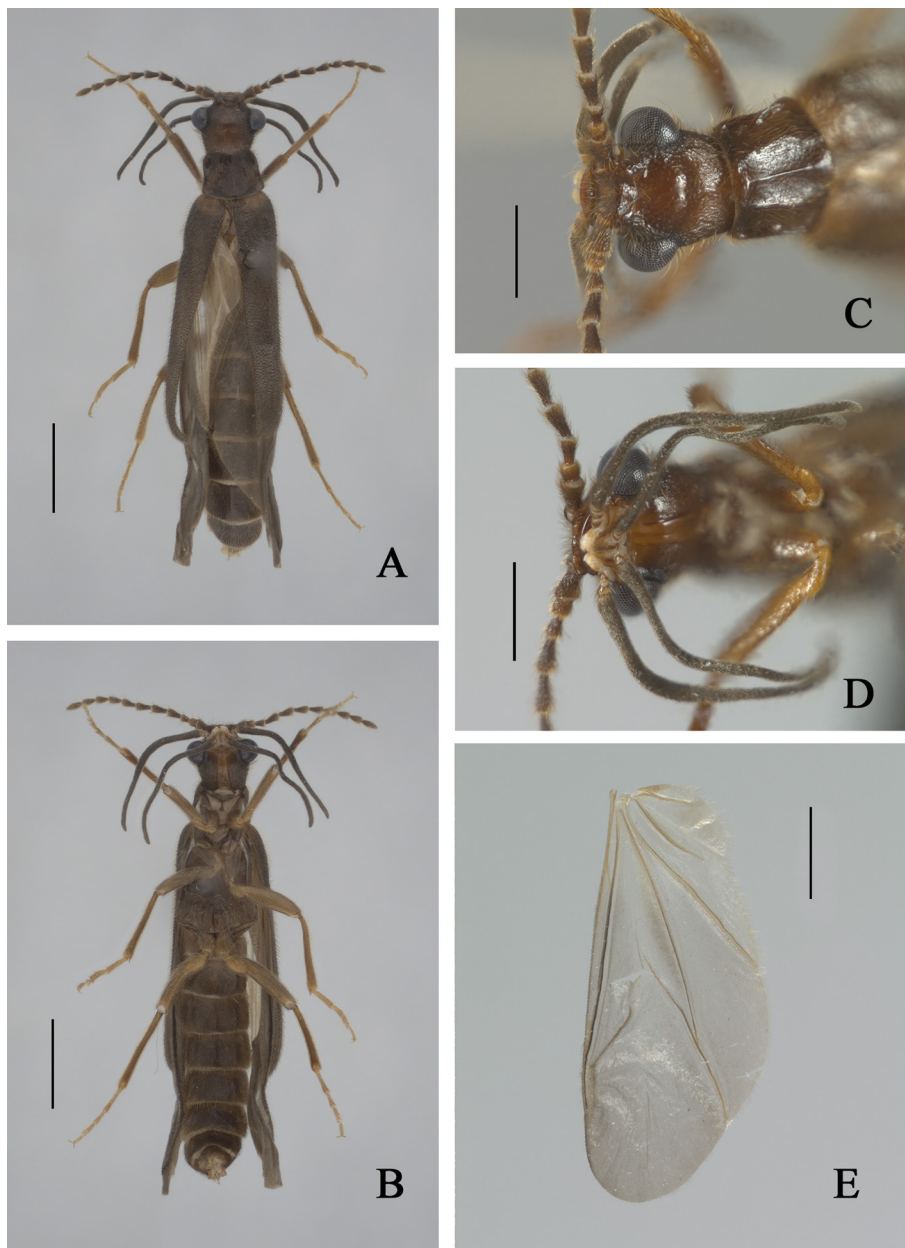


Figure 2. *Telegeusis estebani* sp. nov., holotype male: A) dorsal habitus; B) ventral habitus; C) head, dorsal view; D) palpi, ventral view; E) paratype, metathoracic wing. Scale bars = 1 mm (A-B, E); 0.5 mm (C-D).

Telegeusis flavafusca sp. nov.

(Fig. 3A-E)

<http://zoobank.org/urn:lsid:zoobank.org:act:5736CD48-3730-4254-829D-308C1B3B3959>

Diagnosis. It may be distinguished by the wide, gibbous interocular area, which in other species is narrower and only gibbous centrally. *Telegeusis flavafusca* sp. nov. is similar to *T. hidalguensis* Zaragoza-Caballero, 2015

but differs as follows: integument mostly yellowish-brown (mostly pale yellow in *T. hidalguensis*); elytra shortened (mostly pale yellow in *T. hidalguensis*); elytra shortened, reaching base of abdominal ventrite 3 (longer in *T. hidalguensis*, surpassing middle of abdomen).

Holotype male (CNIN). Size: length 4.4 mm; width 0.75 mm. Color: mostly yellowish brown, darker on some areas; mouthparts reddish brown; posterior half of elytra, and apical palpomeres brown. Head: flat, 1.2 times

longer than wide, at eye level, distance between outer margins of eyes slightly wider than pronotum (0.48 mm). Interocular area convex, forming conspicuous gibba (Fig. 3C). Distance between eyes and pronotum 1.4 times length of eye. Integument shiny and shagreened, finely, sparsely punctate, coarser behind eyes; each puncture with an erect, orange seta; setae longer around the eyes. Antennal tubercles slightly pronounced (Fig. 3C). Inter-antennal area concave, 1.7 times as wide as length of scape. Antennae longer (1.2 mm) than the last maxillary palpomere (0.82 mm) (Fig. 3A, B); scape unwidened. Eyes slightly prominent, longer (0.23 mm) than wide (0.11 mm); interocular distance 4.25 times width of eyes. Frons almost straight; anterior margin concave. Clypeus with very pronounced median tooth at anterior margin. Maxillary and labial palpi with 3 and 2 palpomeres, respectively (Fig. 3D). Thorax: pronotum just wider (0.48 mm) than long (0.46 mm), width less than length of head; anterior margin straight, posterior margin convex, sides strongly constricted at middle; disk glossy, slightly convex centrally, with 1 irregular, elongated gibbosity on each side; integument finely, sparsely punctate, with erect, sparse orange setae. Scutellum shiny, finely punctate, with few setae, posterior margin truncate. Elytra 4.15 times as long as wide (base width) (Fig. 3A), subparallel on anterior 2/3, slightly narrower in posterior third, apex rounded, reaching base of abdominal ventrite III; integument coarsely punctate, strongly granulate on posterior third; each puncture with erect, orange seta. Metathoracic wings 2.35 times longer than wide (Fig. 3E), anterior radial vein (RA) distinctly sclerosed, cubital 2 (CU2) curved, jugal lobe widened. Legs finely punctate, with sparse orange setae from coxae to femora, and dense orangish-brown setae on tibiae and tarsi. Coxae conical; metacoxae shorter. Trochanters not elongated. Femora fusiform, flattened; metafemora slightly longer (Fig. 3A, B). Tibiae elongate, with 2 apical spines: metatibia slightly longer. Tarsomere I shorter in length than II-IV together; claws simple. Abdomen: shiny, integument shagreened with fine punctures, each puncture with an erect, orange seta, slightly sparser at middle (Fig. 3B).

Variation. Type material varies in total length from 3.58 to 4.54 mm, and in width from 0.66 to 0.8 mm. One specimen has integument slightly lighter.

Taxonomic summary

Etymology. From Latin “flavus” (yellow) and “fuscus” (brown), referring to the main coloration of integument.

Type material. Holotype male: Mexico: Tamaulipas, Gómez Farías, Reserva de la Biosfera El Cielo, Malaise trap, 23°08'03.5" N, 99°11'16.5" W, 1/Septiembre/2020, 1,000 m snm, M. Janda et al. leg. (CNIN). Paratypes.

Same data as holotype except 23°08'03.5" N, 99°11'16.5" W, 1/Septiembre/2020, 1,000 m snm (CIUM, 1); 23°08'08.2" N, 99°10'54.5" W, 05/Abril/2021, 800 m snm (CNIN, 2).

Telegeusis luismartinezi sp. nov.

(Fig. 4A-E)

<http://zoobank.org/urn:lsid:zoobank.org:act:57C2183D-F3DA-43FE-8525-B85F1D66B847>

Diagnosis. The coloration resembles *T. moroni* Zaragoza-Caballero, 2015, *T. brachypalpus* Zaragoza-Caballero, 2015 and *T. granulatus* Zaragoza-Caballero & Rodríguez-Vélez, 2011. It differs from *T. moroni* by the labial palpi 2-segmented (3-segmented in *T. moroni*); from *T. brachypalpus* by the length of maxillary and labial palpi, about half of antennae (reaching basal third of antennae in *T. brachypalpus*; and from *T. granulatus* by the head shagreened (granulated in *T. granulatus*), and elytral shortened, about 3.5 times as long as wide (about 6 times as long as wide in *T. granulatus*).

Holotype male (CNIN). Size: length 4.2 mm; width 0.8 mm. Color: mostly brown; mouthparts reddish brown; frons, meso and metaventrite, base of elytra, trochanters, femora orange brown; apical palpomeres dark brown. Head: flat, 1.25 times longer than wide, at eye level, distance between outer margins of eyes slightly wider than pronotum (0.6 mm). Interocular area slightly convex, forming small gibba (Fig. 4C). Eyes-pronotum distance 1.45 times length of eye. Integument shiny, shagreened, finely punctate, coarser behind eyes; each puncture with an erect, orange seta; setae longer around eyes. Antennal tubercles slightly pronounced (Fig. 4C). Inter-antennal area concave; 1.95 times as wide as length of scape. Antennae longer (1.22 mm) than last maxillary palpomere (0.63 mm) (Fig. 4A, B); scape prominent. Eyes reduced, longer (0.21 mm) than wide (0.12 mm); interocular distance 5.25 times width of eyes. Frons slightly concave; anterior margin concave. Clypeus with very pronounced median tooth at anterior margin. Maxillary and labial palpi with 3 and 2 palpomeres respectively (Fig. 4D). Thorax: pronotum wider (0.56 mm) than long (0.46 mm), width less than length of head; anterior margin straight, posterior margin convex, sides slightly constricted at middle; disk glossy, slightly convex centrally, with 1 elongated gibbosity on each side; integument finely, sparsely punctate, with erect, sparse orange setae. Scutellum shiny, coarsely punctate, with few setae, posterior margin truncate. Elytra 3.55 times as long as wide (base width) (Fig. 4A), subparallel on anterior half, gradually narrowing towards rounded apex, reaching apex of abdominal ventrite III; integument coarsely punctate, strongly granulate on posterior third; each puncture with an erect, orange seta. Metathoracic

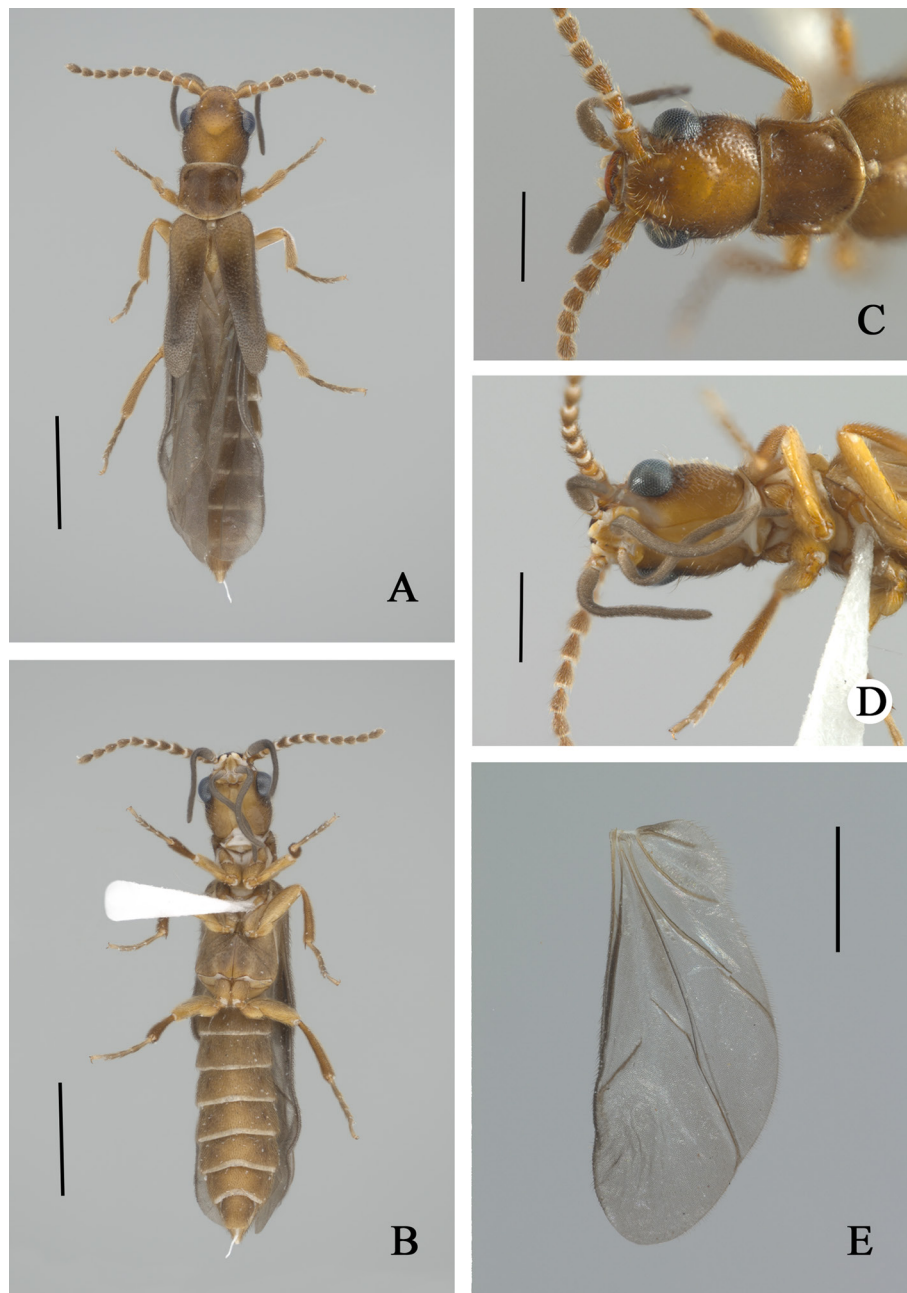


Figure 3. *Telegeusis flavafusca* sp. nov., holotype male: A) dorsal habitus; B) ventral habitus; C) head, dorsal view; D) palpi, ventral view; E) paratype, metathoracic wing. Scale bars = 1 mm (A-B, E); 0.5 mm (C-D).

wings 2.3 times longer than wide (Fig. 4E), anterior radial vein (RA) distinctly sclerosed, cubital 2 (CU2) slightly curved. Legs finely punctate, with sparse orange setae from coxae to femora, and dense orangish-brown setae on tibiae and tarsi. Coxae conical; metacoxae shorter. Trochanters not elongated. Femora fusiform, flattened;

metafemora slightly longer (Fig. 3A, B). Tibiae elongate, somewhat arched, with 2 apical spines; metatibia longer. Tarsomere I shorter in length than II-IV together; claws simple. Abdomen: shiny, integument shagreened with fine punctures, each puncture with an erect, orange seta (Fig. 4B).

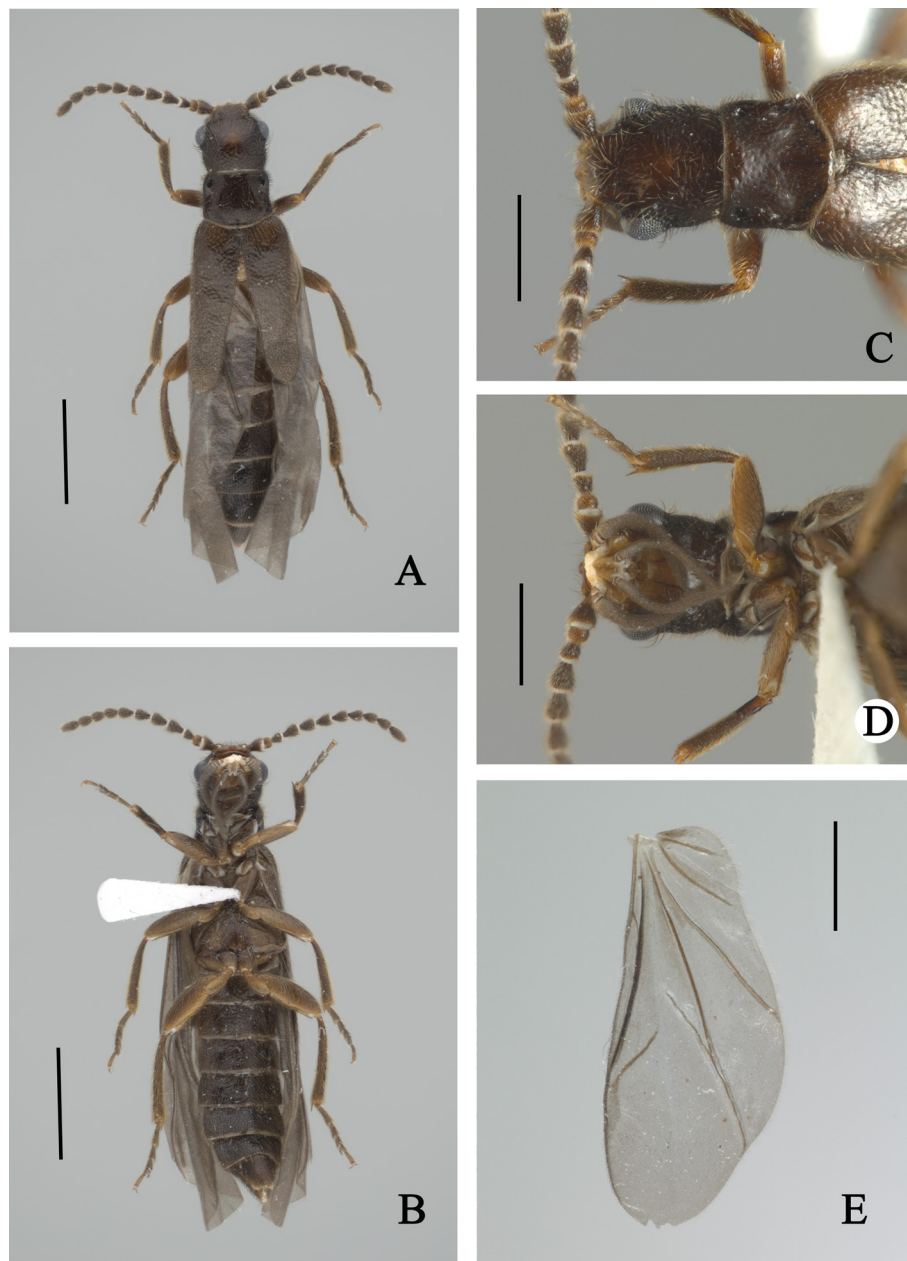


Figure 4. *Telegeusis luismartinezi* sp. nov., holotype male: A) dorsal habitus; B) ventral habitus; C) head, dorsal view; D) palpi, ventral view; E) paratype, metathoracic wing. Scale bars = 1 mm (A-B, E); 0.5 mm (C-D).

Variation. Type material varies in total length from 4.12 to 5.06 mm, and in width from 0.76 to 0.95 mm.

Taxonomic summary

Etymology. This species is named after our friend Luis Martínez from Gómez Farías, El Cielo Biosphere Reserve, for his dedication to protect the biodiversity of El Cielo.

Type material. Holotype male: Mexico: Tamaulipas, Gómez Farías, Reserva de la Biosfera El Cielo, Malaise trap, 23°05'56.2" N, 99°12'17.1" W, 19/Marzo/2020, 1,200 m snm, M. Janda et al. leg. (CNIN). Paratypes. Same data as holotype except 23°05'56.2" N, 99°12'17.1" W, 19/Marzo/2020, 1,200 m snm (CNIN, 2; CIUM, 2); light trap, 23°05'48.3" N, 99°11'59.4" W, 19/Abril/2021, 1,200 m snm (CNIN, 1).

Key to species of *Telegeusis* (modified from Zaragoza-Caballero, 2015)

1. Elytra less than 4 times as long as wide 2
- 1' Elytra more than 4 times as long as wide 10
2. Elytra short, not reaching hind coxae, almost as long as wide *T. schwarzi* Barber, 1952
- 2' Elytra at least reaching hind coxae, longer than wide 3
3. Integument mostly from dark brown to black 4
- 3' Integument mostly from yellow to amber 6
4. Maxillary and labial palpi at most reaching half of the antennae *T. luismartinezi* sp. nov.
- 4' Maxillary and labial palpi surpassing half of the antennae 5
5. Occipital region, genae, gula, clypeus, and pronotum orange; total length 4.5 mm
..... *T. texensis* Fleenor & Taber, 2001
- 5'; Integument dark brown, pronotum and basal part of the legs yellow; total length 3.5 mm
..... *T. panamensis* Alan & Huntton, 1969
6. Maxillary and labial palpomeres longer than antennae 7
- 6' Maxillary and labial palpomeres commonly no longer than antennae 8
7. Integument mostly yellow; last maxillary and labial palpomeres yellow; total length 7.0 - 8.0 mm
..... *T. nunifer* Martin, 1931
- 7' Integument mostly amber; last maxillary and labial palpomeres black; total length 3.3 - 4.6 mm
..... *T. austellus* Zaragoza-Caballero & Rodríguez-Vélez, 2011
8. Maxillary and labial palpi black, shorter than antennae *T. boreios* Zaragoza-Caballero & Rodríguez-Vélez, 2011
- 8' Maxillary and labial palpi brown, as long or longer than antennae 9
9. Eyes small; maxillary and labial palpi as long as antennae
..... *T. sonorensis* Zaragoza-Caballero & Rodríguez-Vélez, 2011
- 9' Eyes prominent; maxillary and labial palpi longer than antennae *T. chamelensis* Zaragoza-Caballero, 1975
10. Integument yellow to amber 11
- 10' Integument brown to black 16
11. Elytra more than 5 times as long as wide 12
- 11' Elytra less than 5 times as long as wide 13
12. Head twice as long as pronotum *T. debilis* Horn, 1895
- 12' Head as long as pronotum *T. cieloensis* sp. nov.
13. Maxillary and labial palpi black, with 4 and 3 palpomeres respectively, longer than antennae
..... *T. glessum* Zaragoza-Caballero & Rodríguez-Vélez, 2011
- 13' Maxillary and labial palpi yellow or amber, with 3 and 2 or 2 and 1 palpomeres respectively, shorter than antennae 14
14. Eyes small; maxillary and labial palpi with 2 and 1 palpomeres respectively
..... *T. dissimilis* Zaragoza-Caballero, 2015
- 14' Eyes prominent; maxillary and labial palpi with 3 and 2 palpomeres respectively 15
15. Integument mostly yellow; head about as long as wide; maxillary and labial palpi reaching half of antennae
..... *T. hidalguensis* Zaragoza-Caballero, 2015
- 15' Integument mostly amber; head longer than wide; maxillary and labial palpi reaching apical third of antennae
..... *T. flavafusca* sp. nov.
16. Maxillary and labial palpi with 4 and 3 palpomeres respectively 17
- 16' Maxillary palpi with 3 palpomeres; and labial palpi with 3 or 2 palpomeres 18
17. Integument mostly dark brown; head shagreened; elytra 4.5 times as long as wide
..... *T. orientalis* Zaragoza-Caballero, 1990
- 17' Integument black; head granulated; elytra almost 6.5 times as long as wide
..... *T. granulatus* Zaragoza-Caballero & Rodríguez-Vélez, 2011
18. Maxillary and labial palpi with 3 palpomeres *T. moroni* Zaragoza-Caballero, 2015
- 18' Maxillary and labial palpi with 3 and 2 palpomeres respectively 19
19. Last maxillary palpomere about as long as antennae; elytral length more than 6 times as long as wide
..... *T. estebani* sp. nov.
- 19' Last maxillary palpomere reaching half of the antennae; last labial palpomere shortened; elytral length less than 6 times as long as wide *T. brachypalpus* Zaragoza-Caballero, 2015

Discussion

Most of the species of *Telegeusis* Horn, 1895 which have been recorded in northern Mexico and USA, show a Nearctic distributional pattern with a disjunct Neotropical distribution (Zaragoza-Caballero, 2015; Zaragoza-Caballero & Rodríguez-Vélez, 2011); however, this may be due to lack of sampling (e.g., they are not recorded in most of Central America) and does not mean that they are not equally or mostly distributed in the Neotropical region. Interestingly, this distributional species pattern is similar to those of North American Omethidae, one of the proposed sister groups of telegeusids (Bocak et al., 2018; Ramsdale, 2010).

Telegeusis are commonly recognized by their 2-3 segmented labial palpi, with the last palpomere greatly elongated, similar to maxillary palpi; and antennae with short-filiform antennomeres (Ivie, 2002). These characters are used to distinguish most species of the genus, mainly the length of last labial and maxillary palpomeres, compared with antennal length (Zaragoza-Caballero, 2015; Zaragoza-Caballero & Rodríguez-Vélez, 2011). One other important character used in the specific diagnoses of *Telegeusis* is the integument coloration, which is greatly consistent across the species. In different groups of insects, the color of the integument is associated to the environment, altitudinal (commonly darker coloration as altitude increases) gradients or feeding habits (Badejo et al., 2020; Stanbrook et al., 2021). However, in *Telegeusis* does not appear to be related to elevation, since there are species with dark and light colors in both low and high areas. Regarding the environment, we found the new species coexisting in the same habitat (cloud forest), between 1,000 and 1,600 m, but nothing else is known about their biology.

Although we confirm the usefulness of the color pattern in *Telegeusis*, we recommend combining it with other characters (e.g., elytral length, head sculpture). However, further studies may help to corroborate the informativeness of this type of character under a phylogenetic framework.

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