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THE FIRST EXTANT SPECIES OF *FALSOCERATOPRION* FERREIRA, WITH A KEY TO THE WEST INDIAN LYCIDAE GENERA (COLEOPTERA: ELATEROIDEA)

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ABSTRACT

Falsoceratoprion pecki Ferreira and Ivie, **new species** from Cuba, is the first extant and second species of the genus *Falsoceratoprion* Ferreira, 2022. The new species is diagnosed, described, illustrated, and compared with the fossil species *Falsoceratoprion fumagalliae* Ferreira, 2022. A key to the West Indian Lycidae genera is provided. The record of *Metapteron testaceipenne* Pic, 1922 in Cuba is found to be incorrect and this species, along with the genus *Metapteron* Bourgeois, 1905, is removed from the West Indian fauna.

Keywords: Leptolycini, Calopterini, Thonalmini, Platerodini, Neotropical

RESUMEN

Falsoceratoprion pecki Ferreira et Ivie se describe como una **nueva especie** para Cuba, esta es la segunda especie perteneciente a *Falsoceratoprion* Ferreira, 2022 y la primera especie no extinta dentro de este género. La nueva especie se diagnostica, describe, ilustra y compara con la especie fósil *Falsoceratoprion fumagalliae* Ferreira, 2022. Se proporciona una clave para determinar los géneros de Lycidae de las Indias Occidentales. Se encontró como incorrecto el registro de *Metapteron testaceipenne* Pic, 1922 para Cuba, por lo que esta especie y el género *Metapteron* Bourgeois, 1905 es removido de la fauna de las Indias Occidentales.

Palabras clave: Leptolycini, Calopterini, Thonalmini, Platerodini, Neotropical

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INTRODUCTION

Despite recent advances in the taxonomy of both the extant and fossil West Indian Lycidae fauna (e.g., Bocak 2001; Ferreira and Ivie 2017, 2022; Ferreira *et al.* 2022; Kazantsev 2009, 2013), much work remains to be done in the region. The naturally difficult geography of the islands and expensive access to collecting sites has prevented mass collecting efforts in many places in the region. These complicating factors have delayed taxonomic progress for the Lycidae fauna of the region when compared to their mainland counterparts, and only few taxonomic studies on Lycidae are known for the

islands, which are either very localized (e.g., Bocak 2001; Ferreira and Ivie 2022; Wojciechowska and Ślipiński 1985; Zayas 1988), severely outdated (e.g., Leng and Mutchler 1922), or both. The recent description of *Falsoceratoprion* Ferreira, 2022 from Dominican amber (Ferreira and Tettamanzi 2022) and examination of material housed in the West Indian Beetle Collection at Montana State University brought to our attention the existence of three specimens of an unknown species belonging to this genus, which so far was only known by the fossil species *Falsoceratoprion fumagalliae* Ferreira, 2022. These newly found extant specimens are from Gran Piedras, Santiago Province, in the far eastern

region of Cuba, all belonging to the same species, which is described in this study. The new species is described, illustrated, and compared with its fossil counterpart. We also take this opportunity to present an updated key to the West Indian Lycidae genera and to clarify the distribution of the genus *Metapteron* Bourgeois, 1905 in Cuba and the West Indies.

MATERIAL AND METHODS

Specimens were studied under a Leica® Wild M205C stereoscopic microscope with magnification up to 160× and compared with existing literature on West Indian and Neotropical Lycidae (Bocakova 2003; Ferreira and Ivie 2022; Ferreira and Tettamanzi 2022; Kazantsev 2009, 2013, 2017; Leng and Mutchler 1922). Morphological terminology follows Kazantsev (2005) and Lawrence *et al.* (2011). Photos of specimens were taken with a Canon EOS 6D DSLR with a MP-E 65-mm lens and using a Leica M205C Microscope attached to a Canon EOS 6D DSLR camera. Images were stacked using Zerene Stacker version 1.04. Enhancements to digital images were made in Adobe Photoshop CC 2020 and Adobe Photoshop CC for iPad, and plate preparations were made in Adobe Illustrator CC 2020. The distribution map was generated using the software Google Earth and Quantum GIS 3.16, using the maps available on the website www.naturearthdata.com, a free public database of maps. Examined specimens are deposited in the following collections (curators names presented after the institution information): **CMNC**—Canadian Museum of Nature, Ontario, Ottawa, Canada (Robert A. Anderson); **WIBF**—West Indian Beetle Fauna Project Collection, Montana State University, Bozeman, Montana, USA (Michael A. Ivie).

RESULTS

Family Lycidae Laporte, 1836

Subfamily Lycinae Laporte, 1836

Tribe Calopterini Green, 1949

Genus *Falsoceratoprion* Ferreira, 2022

Type Species. *Falsoceratoprion fumagalliae* Ferreira, 2022.

Updated Differential Diagnosis. The study of *Falsoceratoprion pecki* Ferreira and Ivie, **new species** allowed the examination of the mouthparts and male genitalia of members of this genus, and we supplement the diagnosis given in Ferreira and Tettamanzi (2022) by including information on these characters. *Falsoceratoprion* can be further separated from all other known West Indian Lycidae by the combination of the following characteristics: developed mouthparts (vs. weakly developed mandibles that are

seemingly absent with either strongly reduced or absent labial palps in the Leptolycini, or developed mouthparts as in all *Thonalmus* Bourgeois, 1883 and *Mesopteron* Bourgeois, 1905) and male genitalia distinctly trilobate (vs. parameres fused and forming a tube in *Thonalmus*; trilobate in *Mesopteron*; variable in the Leptolycini, ranging from standard trilobate male genitalia to strongly simplified in some genera [*Leptolycus* Leng and Mutchler, 1922 and some *Cessator* Kazantsev, 2009]).

Falsoceratoprion pecki Ferreira and Ivie, new species

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Figs. 1, 2

Examined Specimens (*n* = 3). Holotype: CUBA: Santiago Prov.; Gran Piedra, Met. Radar; 6-17XII.95. 1100m; elfin for FIT; S. Peck, 95-76 (CMNC). **Paratypes (2):** CUBA: Santiago Prov.; Gran Piedra, Met. Radar; 6-17XII.95. 1100m; elfin for FIT; L. Masner, C-03, 95-76 (CMNC, WIBF).

Diagnosis. *Falsoceratoprion pecki* is remarkably similar to *F. fumagalliae*; however, it can be readily separated by the terminal maxillary palpomere acuminate (see arrow in Fig. 2A) (vs. terminal maxillary palpomere elongate and spatulate in *F. fumagalliae*).

Description. **Length (head + pronotum + elytra):** 3.0–3.2 mm. **Width (across humeri):** 0.6–0.7 mm. **General coloration and setation:** Thorax, sides of head and coxae, and basal half of elytra yellow, remainder of the body brown; body densely setose throughout (Figs. 1A, B, 2A). **Head:** As long as wide, widest at eyes (Fig. 1A), posterior half covered by pronotum (Fig. 1A); hypognathous (Fig. 1B), frons immediately posterior to antennal insertion strongly gibbose (Fig. 1A), concave behind eyes (Fig. 1A). Eyes hemispherical, projecting anterolaterally, coarsely granulate (Figs. 1A, B, 2A). **Mouthparts:** Maxillary palp 4-segmented, bearing short sparsely distributed setae throughout (Fig. 2A); palpomere I short, half the length II; palpomere III subequal to I; terminal maxillary palpomere subequal in length to II, acuminate (Fig. 2A); lacinia densely setose. Labial palp 3-segmented; terminal palpomere as long as I + II combined, acuminate (Fig. 2A). Posterior margin of clypeus clearly emarginate; labrum distinct from clypeus, transverse and freely movable, setose. Mandibles small, hooked, as long as labrum, coadapted to labrum (Fig. 2A). **Antenna:** 11-segmented, inserted on gibbous prominence at anterior portion of head, in resting position reaching apical third of elytra (Figs. 1A, B); densely setose, dorsoventrally flattened; scape pyriform, approximate at base; antennomere 2 *ca.* one-fourth length of scape; antennomeres 4–10 subequal,

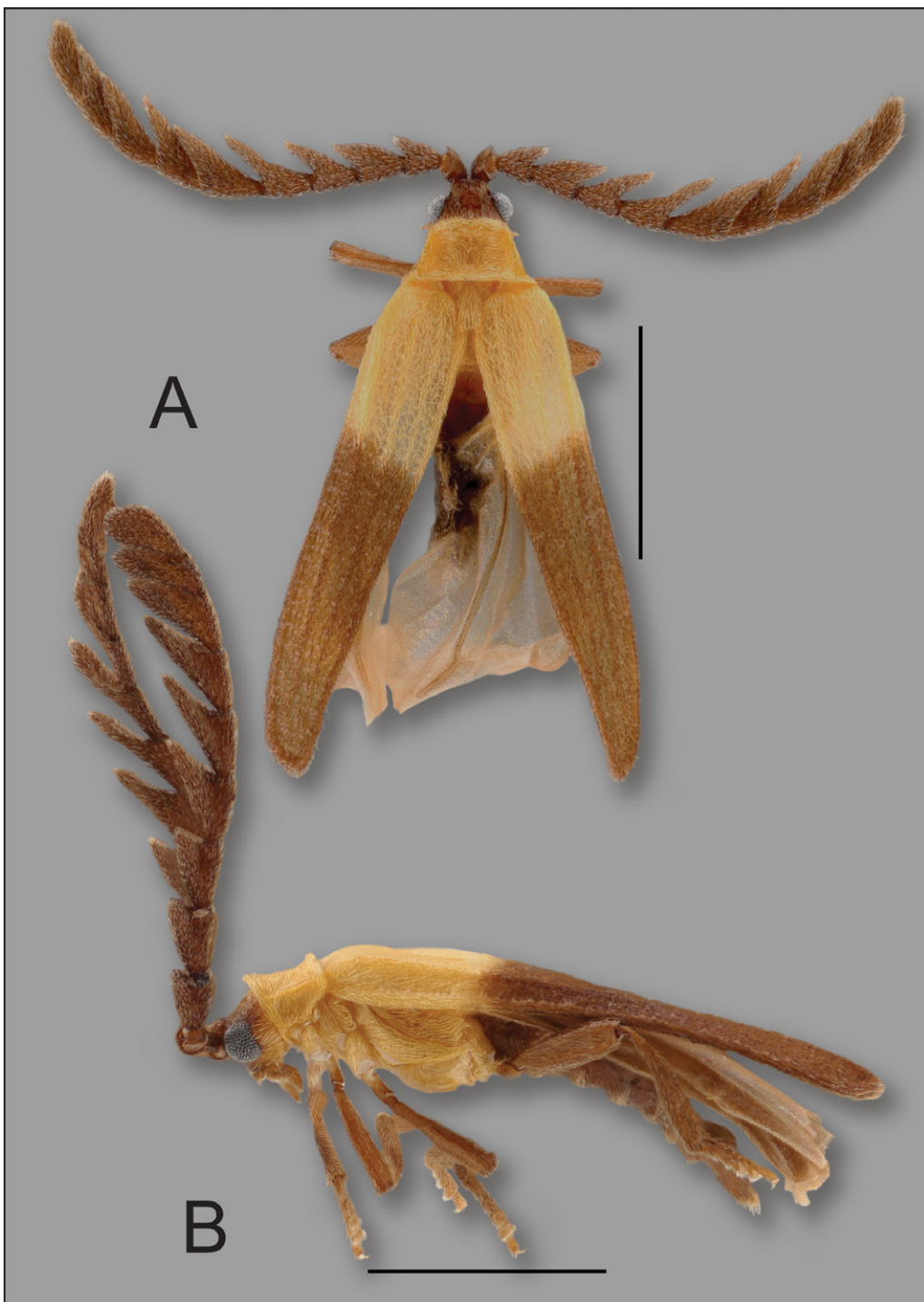


Fig. 1. *Falsoceratoprion pecki*, new species. A) Dorsal view, B) Lateral view. Scale bars = 1 mm.

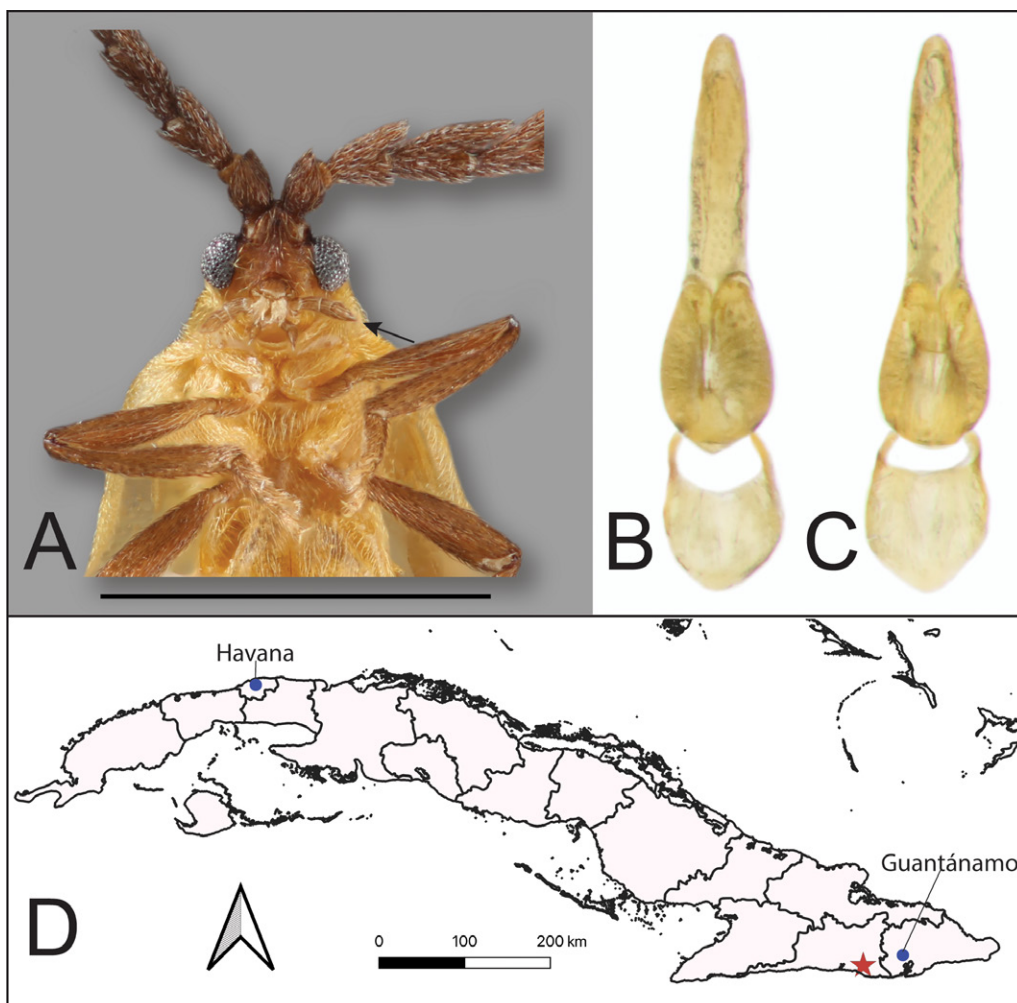


Fig. 2. *Falsoceratoprion pecki*, new species. A) Ventral view of head and abdomen (scale bar = 1 mm), B) Male genitalia in dorsal view (not to scale), C) Male genitalia in ventral view (not to scale), D) Distribution map of *F. pecki* in Cuba (star).

slightly increasing in length towards apex; antennomeres 3–10 distinctly serrate, more strongly so in 6–10, approaching pectinate, branches of 6–10 increasing in size (Fig. 1B); antennomere 11 round apically (Fig. 1A). **Thorax:** Pronotum trapezoidal, transverse, margins moderately developed (Figs. 1A, B), posteriorly bearing weakly developed median fovea, median longitudinal carina absent (Fig. 1A). Prosternum triangular (Fig. 2A). Mesoventrite trapezoidal (Fig. 2A); mesospiracle elongate, protuberant, distinctly visible (Figs. 1B). Scutellar shield rectangular, elongate, shallowly notched apically (Fig. 1A). Metaventrite convex, posterolateral angles moderately acute, metadiscrimen complete (Fig. 2A); metanepisternum acuminate, crescent shaped in lateral view, anteriorly round, tapering

towards apex. **Elytra:** Dehiscent, 3-costate, with short, bristle-like setae throughout (Fig. 1A); costae weakly developed, subparallel; costa I discontinued medially, costae II + III subapically fused (Fig. 1A). **Abdomen:** With eight ventrites; ventrite 7 shallowly notched medially; ventrite 8 lanceolate, apically blunt, ca. 4× longer than ventrite 7, one-third longer than tergite IX. Genitalia distinctly trilobate (Figs. 2B, C), symmetrical. Median lobe elongate, fusiform, twice the length of parameres (Figs. 2B, C), apically in ventral view bearing a distinct genital opening (Fig. 2C). Parameres rounded apically; phallobase posteriorly round, median suture absent (Figs. 2B, C).

Etymology. This species is named in honor of Stewart Blaine Peck, who collected the holotype of *F. pecki* and has contributed extensively to our

knowledge of West Indian beetles with collections and publications.

KEY TO THE GENERA OF ADULT MALE LYCIDAE OF THE WEST INDIES

Note: This key follows the taxonomic changes proposed in Ferreira and Ivie (2022): *Nanolycus* Kazantsev, 2013 was placed in synonymy with *Cessator* Kazantsev, 2009, and the subgenus *Leptolycus* (*Baholycus*) Bocak, 2001 was placed in synonymy with *Leptolycus* Leng and Mutchler, 1922. The record of *Metapteron* from Cuba (Pic 1922) is rejected and the genus is not included in the key (see Discussion below).

1. Basal half of elytra orange or red and apical half metallic blue or greenish, bearing three elytral costae; The Bahamas, Cuba, Hispaniola, Puerto Rico, Jamaica, Montserrat ***Thonalmus* Bourgeois, 1883** (Fig. 3I)
- 1'. Elytra never with the above color combination, apical half of elytra never metallic, bearing two, three, four, or an indistinct number of elytral costae 2
2. Mandibles and labium normally developed; elytral shape variable 3
- 2'. Mandibles and labium strongly reduced, seemingly absent; elytra strongly dehiscent 5
3. Pronotum with distinct, complete median longitudinal carina; elytra with three longitudinal costae, strongly reticulated, bearing small, subquadrate cells; Guadeloupe, Martinique, St. Lucia, St. Vincent, Grenada ***Mesopteron* Bourgeois, 1905** (Fig. 3F)
- 3'. Pronotal median carina absent; elytral costae and cells not as above 4
4. Antenna distinctly serrate (Figs. 1A, B); elytral costa I medially discontinued, costae II + III fused apically; elytral cells absent (Fig. 1A); Cuba ***Falsoceratoprion* Ferreira, 2022** (Fig. 1A)
- 4'. Antenna filiform; elytra with distinct costae; elytra with small, subcircular cells; Grand Bahama (WIBF), Cuba, St. Vincent ***Plateros* Bourgeois, 1879** (Fig. 3G)
5. Antennomere 2 small, antennomere 3 multiple times longer than 2 6
- 5'. Antennomeres 2 and 3 small, subequal in length 7
6. Antenna in lateral view dorsoventrally flattened; elytral cells circular, distinct and strongly developed; pronotum longer than wide, widest at base, lateral margins bearing strongly developed sulci; Dominican Republic ***Dominopteron* Kazantsev, 2013** (Fig. 3B)
- 6'. Antenna in lateral view tubular, not dorsoventrally flattened; elytral cells indistinct,

seemingly absent, elytral surface with a granulate texture; pronotum transverse, the base and apex subequal, lateral margins simple; Cuba, Dominican Republic, Puerto Rico, Virgin Islands ***Cessator* Kazantsev, 2009** (Fig. 3A)

7. Elytra remarkably dehiscent, narrowed, tapered towards apex; metatrochanters distinctly elongate and tubular; antenna filiform, flabellate, serrate, or subserrate; Cuba, Dominican Republic, Puerto Rico, Virgin Islands ***Leptolycus* Leng and Mutchler, 1922** (Fig. 3E)
- 7'. Elytra moderately or weakly dehiscent, not narrowed, width similar throughout; metatrochanters short, semi-triangular; antenna variable, never flabellate 8
8. Elytra and pronotum densely setose, bearing moderately long and decumbent setae; antennomeres 4–11 short, as long as wide; scutellar shield distinctly bifurcated posteriorly, tips of bifurcations acute; Cuba, Dominican Republic ***Electropteron* Kazantsev, 2013** (Fig. 3D)
- 8'. Elytra and pronotum with setae weakly developed, seemingly glabrous or with only short setae throughout; antennomeres 4–11 longer than wide, elongate, parallel-sided; scutellar shield variable, but not bearing acute tips 9
9. Pronotum strongly transverse, lacking lateral margins; elytral costae weakly developed, disappearing towards apex; antenna bearing long-bristle like setae; scutellar shield subquadrate, apically notched; small, short, body length < 1.75 mm; Dominican Republic, Puerto Rico ***Tainopteron* Kazantsev, 2009** (Fig. 3H)
- 9'. Pronotum longer than wide, all margins distinct; elytral costae strongly developed and visible throughout, fused apically; antenna bearing short, decumbent setae; scutellar shield heart-shaped; large, long, body length > 4.88 mm; Puerto Rico ***Dracolycus* Ferreira and Ivie, 2022** (Fig. 3C)

DISCUSSION

Distribution Records of *Metapteron* in Cuba.

The genus *Metapteron* is composed of at least 17 species, distributed widely in South America (Brazil, Bolivia, Peru, Colombia, Venezuela) and into Central America (Kleine 1933, 1941). Specimens of this genus are abundant in collections from the mainland Neotropics, and several undescribed species have been examined (VSF, unpublished). It has not, however, been found in the West Indies Bioregion. A single record, that of *Metapteron testaceipenne* Pic, 1922 (Figs. 4A, B), challenges

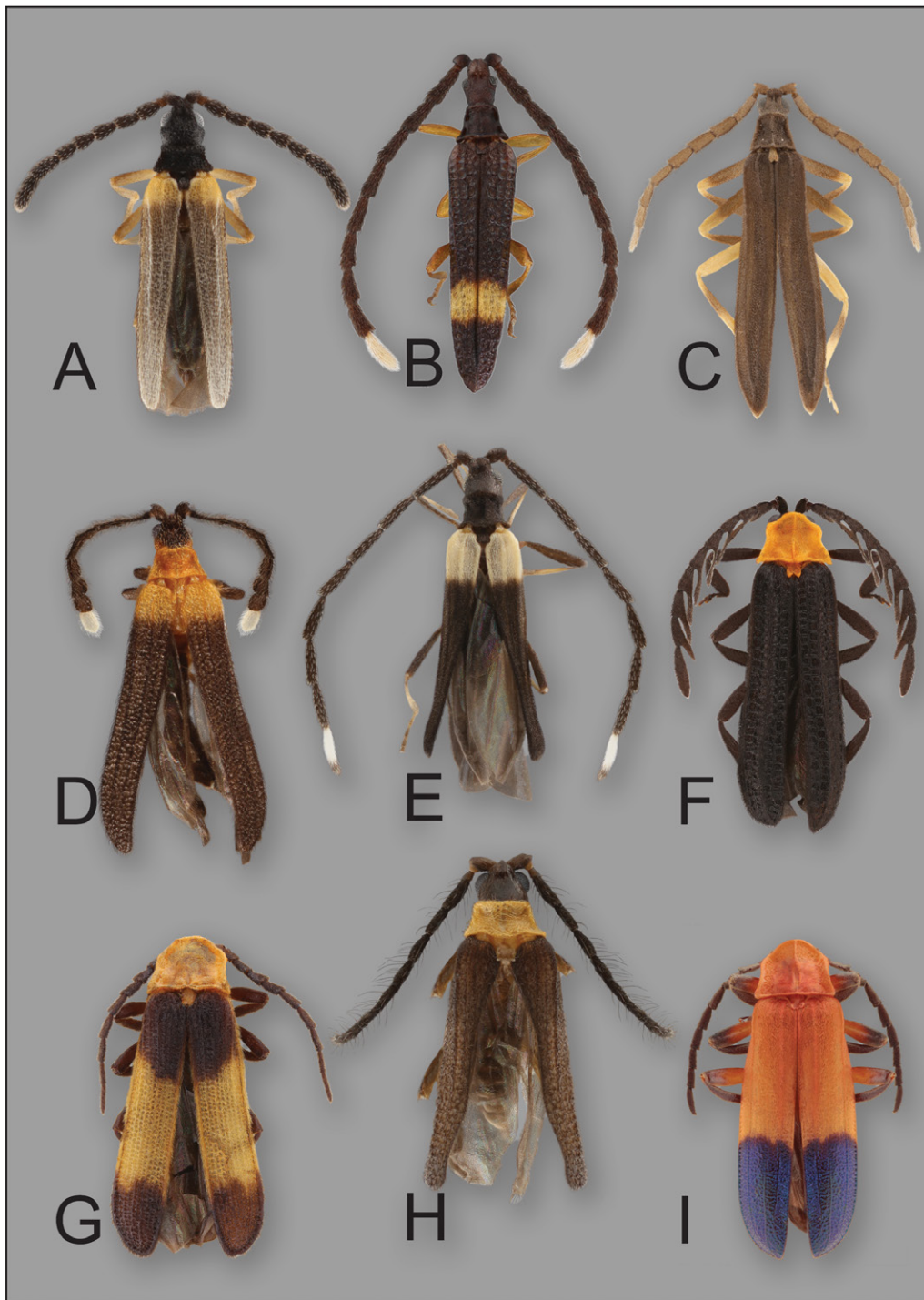


Fig. 3. Representatives of adult male Lycidae of the West Indies. A) *Cessator luquillonis* Kazantsev, 2009, B) *Dominopteron hispaniolum* Kazantsev, 2013, C) *Dracolytus chupacabra* Ferreira and Ivie, 2022, D) *Electropteron* sp., E) *Leptolycus puellus* Kazantsev, 2009, F) *Mesopteron insularum* Chalumeau and Roguet, 1994, G) *Plateros fraternus* Gorham, 1898, H) *Tainopteron milleri* Kazantsev, 2009, I) *Thonalmus aulicus* (Jacquelin du Val, 1856).



Fig. 4. Holotype of *Metapteron testaceipenne*. A) Dorsal view, B) Labels. Photo credit: Azadeh Taghavian (used with permission).

this assertion, as Pic (1922) reported it from Cuba. However, the lack of re-collection caused us to reconsider this record. It is a yellow, immaculate species, and this general color pattern has been seen in hundreds of *Metapteron* from all over in South America. The Pic type particularly resembles *Metapteron socium* (Kirsch, 1865) and *Metapteron xanthomelas* (Lucas, 1857) (Ferreira and Costa 2015), but a revision is required to properly associate the Pic type with specific specimens. South American countries within the known range of *Metapteron* have at least 11 localities named “Cuba” (one in Venezuela; two in Bolivia; eight in Colombia) plus several in Mexico and one in Panama (<https://geotarget.com/called.php?qcity=Cuba> searched 26 November 2022). It is expected that the source of the Pic record is one of these localities, or another place name that shares its name with the nation of Cuba. It will remain for a thorough revision of the genus to clarify the real origin of Pic’s type, but for now, we consider the record for the island of Cuba to be an error, and remove the record from the West Indian Bioregion. We encourage anyone who can refute this conclusion to make their evidence known in the form of specimens accurately associated with Cuba.

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