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Description of two new species of Apomecynini (Coleoptera, Cerambycidae, Lamiinae)

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ABSTRACT

Two new species of cerambycid beetles are described and illustrated: *Morrisia skillmani* from Guatemala and *Adetaptera jejetama* from Mexico. Additionally, a map illustrating the geographic distribution of the species of *Morrisia* Santos-Silva et al., 2019, and a key to the species of the genus are provided.

INTRODUCTION

According to Tavakilian and Chevillotte (2021), Apomecynini Thomson, 1860, currently includes almost 1900 species distributed in 229 genera occurring in America, Africa, Asia, and Oceania. Santos-Silva et al. (2019) described *Morrisia* and included two species: *M. squamosa*, previously described in *Adetus* LeConte, 1852, by Chemsak and Noguera (1995), known from Mexico (Jalisco and Guerrero); and their new species *M. pulchra*, known from Mexico (Quintana Roo). Currently, these are the only known species of *Morrisia* (Monné, 2021; Tavakilian and Chevillotte, 2021). *Adetaptera* Santos-Silva et al. (2019) was described to include apterous or brachypterous species previously included in *Adetus*. The genus includes 17 species, distributed from the United States of America to southern South America (Tavakilian and Chevillotte, 2021). The area of Sierra del Caral in Guatemala, where the holotype of *Morrisia skillmani*, sp. nov., was collected, is defined as a cloud forest (USAID, 2003). According to FUNDAECO (2021), the area

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is part of the mountain chain of Merendón, where the average yearly precipitation is 2900 mm and the temperature ranges from 14° C to 36° C (average 26° C). Probably, the area where the holotype of *Adetaptera jejetama*, sp. nov., was collected is located in the Parque Nacional Cañón del Sumidero. Depending on the region of the park, vegetation and climate can be considerably different. According to Espinosa-Jiménez et al. (2011), the park is divided into two regions, the Central Depression and the Central Highlands; moreover, the park experiences three types of climate: dry warm climate, semiarid climate with summer rains, and a climate with average annual temperature greater than 22° C. Here we describe a new species of *Morrisia* and another of *Adetaptera*, both from Central American countries.

A complete review of *Adetaptera* was not possible at this time because many species are not available for us to examine. Furthermore, according to Santos-Silva et al. (2019), it is possible that species currently placed in *Adetus* LeConte, 1852, belong to *Adetaptera*. Therefore, we would need to study all species currently placed in both genera. Here we provide information to demonstrate that the new species of *Adetaptera* does not belong in *Adetus* or even in the related genera of Apomecynini. Thus, a review of *Adetaptera* and *Adetus* would not change the fact that the species described here is a new species. Furthermore, a full revision of *Adetus* would demand a years-long study of other genera of Apomecynini, especially given the need to study type material deposited in various institutions around the world. In the interest of time, we chose simply to verify that the new species of *Adetaptera* we present here was not already described in any genus of Apomecynini.

MATERIAL AND METHODS

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

Locality records of *Morrisia* species were obtained from the literature (Chemsak and Noguera, 1993; Toledo, 2005; Santos-Silva et al., 2019), and georeferenced using Google Earth Pro 7.3.3 (https://earth.google.com). A distribution map was generated using R (R Core Team, 2019). Data management and map visualization was done using tidyverse (https://cran.r-project.org/web/packages/tidyverse/), ggplot2 (https://cran.r-project.org/web/packages/ggplot2/), gridExtra (https://cran.r-project.org/web/packages/gridExtra/), OpenStreetMap (https://cran.r-project.org/web/packages/OpenStreetMap/), and ggspatial (https://cran.r-project.org/web/packages/ggspatial/) packages.

The collection acronyms used in the text are as follows:

FSCA Florida State Collection of Arthropods, Gainesville, FL
FWSC Frederick W. Skillman Jr. Collection, Phoenix, AZ
LGBC Larry G. Bezark Collection, Sacramento, CA

RESULTS

Morrisia skillmani, sp. nov.

Figures 1A–D, 3C, F, I

Description: Holotype male. Integument mostly black; ventral mouthparts reddish brown; anteclypeus reddish brown posteriorly, brown anteriorly; labrum brown on posterior 2/3, reddish brown on anterior third; scape mostly dark brown; pedicel and antennomeres III–XI brown (III and IV dark reddish brown depending on light intensity). Ventral surface of abdomen partially dark reddish brown centrally.

Head: Frons, vertex, area behind eyes, genae, and postclypeus coarsely, abundantly punctate; with short, thick white seta in nearly all punctures; with minute yellowish setae, absent on some areas, sparse or slightly abundant on others; area behind upper eye lobes with a few long, erect brown setae close to eye; anterior margin of postclypeus with yellowish-brown setae directed forward. Labrum coplanar with anteclypeus at posterior quarter, gradually inclined at anterior 3/4; coplanar area glabrous, except a few short white setae on central region close to inclined area; inclined area with moderately long, erect yellowish-brown setae not obscuring integument; anterior margin with dense fringe of yellowish-brown setae. Eyes divided; lower eye lobes with 10 rows of ommatidia (fig. 3C); distance between upper eye lobes 0.46× distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.68 times distance between outer margins of eyes. Antennae 1.1× elytral length, almost reaching posterior third of elytra. Scape coarsely, moderately shallowly punctate; with thick, decumbent, yellow and white setae not obscuring integument, distinctly sparser ventrally. Pedicel and antennomeres III–IX with short, decumbent yellow and white setae (white setae gradually sparser toward VII dorsally, absent dorsally on VIII and IX); dorsal surface of antennomeres VIII–IX with brownish pubescence and short, suberect brownish and yellowish-brown setae interspersed; antennomeres X–XI with pubescence mostly brownish. Antennal formula based on length of antennomere III: scape = 0.51; pedicel = 0.19; IV = 0.57; V = 0.29; VI = 0.24; VII = 0.24; VIII = 0.21; IX = 0.19; X = 0.19; XI = 0.29.

Thorax: Prothorax longer than wide; coarse, dense, deep punctures gradually finer toward prosternum; sides slightly, uniformly rounded from anterolateral angles to posterolateral angles; nearly all punctures with small brownish seta; area between punctures with minute, thick, very sparse yellow setae, absent on wide central area of pronotum, except on anterior quarter; with a few tufts of short, thick yellow setae on sides and part of central area of pronotum; wide central area of pronotum with sparse, short brownish setae among punctures. Narrowest area of prosternal process 0.35× procoxal width. Ventral surface of meso- and metathorax with coarse, abundant, deep punctures, with minute, whitish seta; ventral surface of mesothorax and sides of metathorax with minute, sparse, yellowish setae between punctures; central area of metaventrite glabrous between punctures, except center of apex with short, thick, sparse, white and yellow setae. Scutellum glabrous on sides of anterior 3/4, with short, mostly yellow setae on center of anterior 3/4, and minute, moderately abundant yellow setae on posterior quarter.

Elytra. Slightly arched near middle (fig. 3F); abundantly, very coarsely, and deeply punctate

(fig. 3I); with oblique, irregular, yellowish-white pubescent band about middle, starting near epipleural margin, not reaching suture, and entire posterior fifth, both with minute yellow setae interspersed; anterior half with sparse, thick, short, and minute yellow setae between punctures, more abundant on circumscutellar region; remaining surface with sparse brown pubescence between punctures; sutural region with brown pubescence and short yellow setae interspersed on anterior 3/4, and sparse yellow setae on posterior quarter. ***Legs.*** Femora transversely rugose; with minute, thick, yellow and white setae not obscuring integument, and longer, thick, yellow and white setae interspersed laterally, more abundant near apex. Protibiae with minute, thick, yellow and white setae not obscuring integument dorsally and laterally, and longer, thick, yellow and white setae interspersed laterally, more abundant near apex; ventral surface with moderately short yellowish-white setae on basal half, and bristly, abundant brown, short, decumbent setae on posterior half. Basal 3/4 of mesotibiae with minute, thick, yellow and white setae not obscuring integument dorsally and laterally; outer side of dorsal surface with short, erect fringe of yellow setae, and remaining surface with short, sparse, decumbent yellow setae; sides of posterior quarter with short, decumbent, thick, abundant, yellow and white setae; ventral surface with abundant, thick, decumbent setae, whitish basally, gradually yellower toward apex. Metatibiae with minute, thick, yellow and white setae not obscuring integument dorsally and laterally; ventral surface with short, bristly yellowish-white setae; apex with fringe of thick yellow setae.

Abdomen: Ventrites coarsely punctate, punctures slightly finer, sparser from ventrite 1 to 5, except almost smooth on posterior region; with minute, sparse, yellow and white setae, and a few short, decumbent, thick, white and yellow setae interspersed, except apex of ventrites 1 to 4 with fringe of short, thick, decumbent yellow setae.

Dimensions (mm): Total length, 6.30; prothoracic length, 1.90; anterior prothoracic width, 1.35; posterior prothoracic width, 1.45; maximum prothoracic width, 1.65; humeral width, 2.00; elytral length, 3.95.

Type Material: Holotype male from GUATEMALA, *Izabal*: Morales, Finca la Firmeza, Sierra de Caral, FUNDAECO, 600 m, 15.407148, -88.696255, 27-28.V.2019, Skillman, Wappes, and Monzón leg. (FSCA, formerly FWSC).

Etymology: The new species is dedicated to Frederick W. Skillman, Jr. (FWSC).

Remarks: *Morrisia skillmani*, sp. nov., differs from *M. pulchra* Santos-Silva et al., 2019, and *M. squamosa* (Chemsak and Noguera, 1993) by the lower eye lobes with 10 rows of ommatidia (fig. 3C). In *M. pulchra* the lower eye lobes have five rows of ommatidia (fig. 3B), and *M. squamosa* seven (fig. 3A). Furthermore, the elytra (fig. 3I) and pronotum are more coarsely punctate than in *M. pulchra* and *M. squamosa* (fig. 3G–H). This is the first record of the genus in Guatemala (fig. 2).

KEY TO SPECIES OF *MORRISIA*

1. Lower eye lobes with 10 rows of ommatidia; prothorax twice the elytral length; pronotal punctures on central region longer than half the pedicel length. Guatemala (Izabal) …… *M. skillmani*
– Lower eye lobes with fewer than 10 rows of ommatidia; prothorax longer than the 2× elytral length; pronotal punctures distinctly shorter than half the pedicel length ……...…… 2

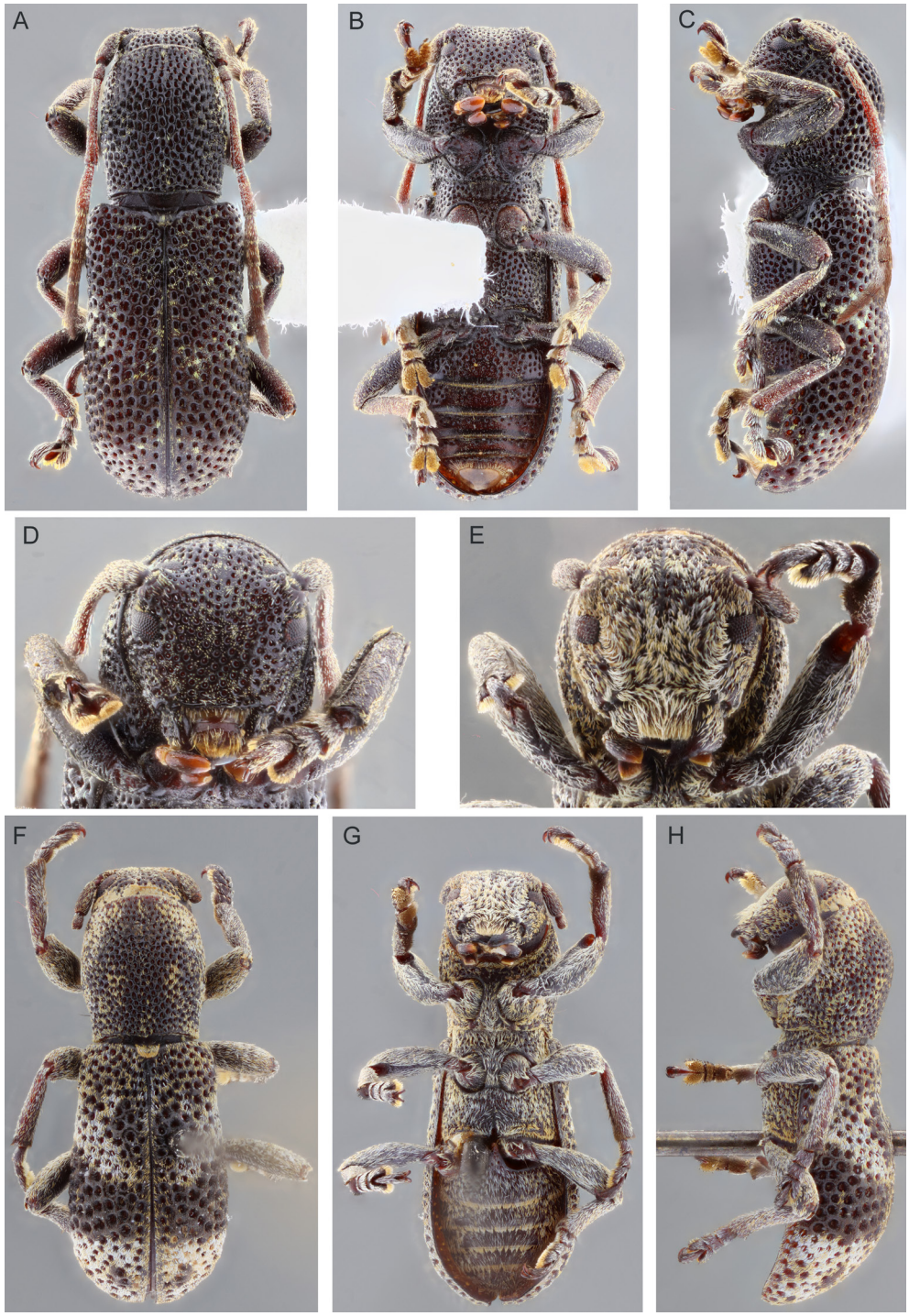

FIGURE 1. **A–D.** *Morrisia skillmani*, sp. nov., holotype male: ***A.*** Dorsal habitus; ***B.*** Ventral habitus; ***C.*** Lateral habitus; ***D.*** Head frontal view. ***E–H.*** *Adetaptera jejetama*, sp. nov., holotype male: ***E.*** Head frontal view; ***F.*** Dorsal habitus; ***G.*** Ventral habitus; ***H.*** Lateral habitus.

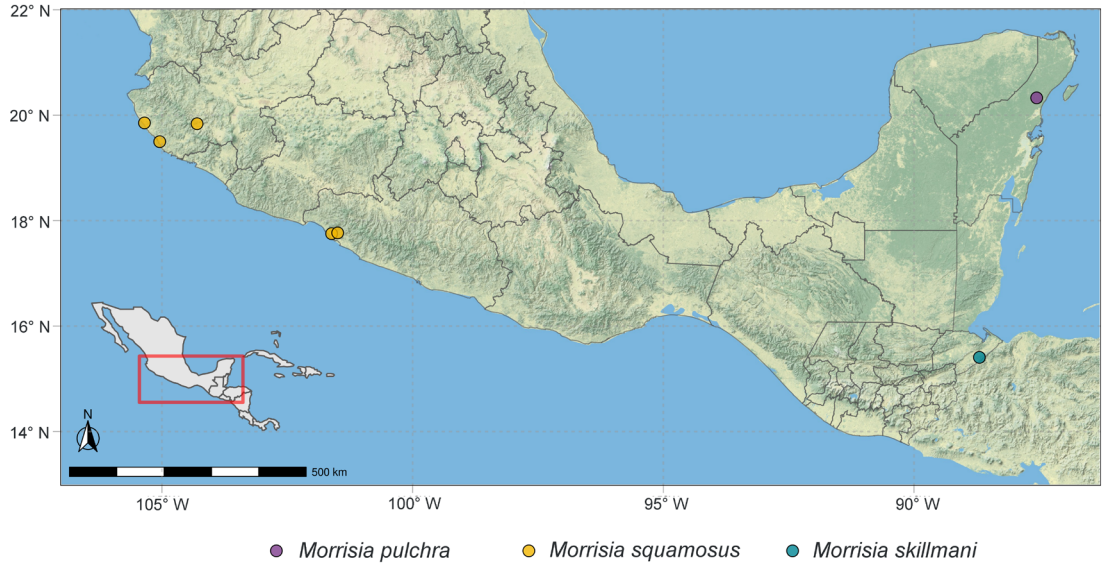

FIGURE 2. Geographical distribution of *Morrisia* species.

2(1). Lower eye lobes shorter than the pedicel length; distance between upper eye lobes about 2× the length of scape; only antennomeres IX–XI entirely with dark pubescence. Mexico (Quintana Roo) ……..…… *M. pulchra* Santos-Silva et al., 2019

– Lower eye lobes at least as long as pedicel length; distance between upper eye lobes at most 1.5× the length of scape; antennomeres V–XI with dark pubescence. Mexico (Jalisco, Guerrero) ……..……. *M. squamosa* (Chemsak and Noguera, 1993)

Adetaptera jejetama, sp. nov.

Figure 1E–H

Description: Holotype male. Integument mostly dark brown, almost black; apex of palpomeres reddish brown.

Head: Frons coarsely, abundantly punctate; with moderately thick, short, decumbent, yellow and white setae obscuring integument. Area between antennal tubercles and upper eye lobes coarsely, abundantly punctate; with a few short, yellow and white setae centrally; sides with abundant, moderately thick, short, decumbent, yellow and white setae partially obscuring integument. Remaining surface of vertex coarsely, abundantly punctate; with yellow pubescence not obscuring integument, and white setae interspersed (some punctures with short brownish seta). Area behind eyes and genae coarsely, abundantly punctate; with abundant, decumbent, moderately thick yellow setae and white setae with same shape interspersed (white setae more abundant on genae); area close to upper eye lobes with a few long, erect brownish setae. Postclypeus with setae as on frons, and moderately long, white setae interspersed. Labrum coplanar with clypeus at posterior 2/3, inclined at anterior third; posterior third with abundant yellowish pubescence, and long, abundant whitish setae directed forward interspersed; anterior third with dense yellow pubescence. Basal 2/3 of outer side of mandibles with abundant, short,

FIGURE 3. ***A–C.*** Eyes: ***A.*** *Morrisia squamosa* (Chemsak and Noguera, 1993), male; ***B.*** *M. pulchra* Santos-Silva et al., 2019, holotype female; ***C.*** *M. skillmani*, holotype male. ***D–F.*** Elytral curvature: ***D.*** *M. squamosa*, male; ***E.*** *M. pulchra*, holotype female; ***F.*** *M. skillmani*, holotype male. ***G–I.*** Elytral punctures on posterior half: ***G.*** *M. squamosa*, male; ***H.*** *M. pulchra*, holotype female; ***I.*** *M. skillmani*, holotype male.

decumbent, yellow and white setae not obscuring integument; apical third glabrous. Eyes almost divided; lower eye lobes with nine rows of ommatidia; distance between upper eye lobes 0.45× distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.68× distance between outer margins of eyes. Antennae missing antennomeres III–XI in left antenna; missing pedicel and antennomeres III–XI in right antenna; scape slightly widened basally, then subcylindrical toward apex, shorter than width between upper eye lobes, about

2.5× longer than pedicel, with short, thick, decumbent, abundant, yellow and white setae partially obscuring integument; pedicel with abundant, decumbent, yellow and white setae partially obscuring integument.

Thorax: Prothorax longer than wide; sides uniformly rounded from anterolateral angles to posterior quarter, then subparallel toward posterolateral angles. Pronotum coarsely, reticulate-punctate, punctures slightly finer on anterior quarter; sides with short, decumbent, thick, abundant, yellow and white setae (denser and more abundant on anterior third); area after middle, between sides and center with moderately sparse, thick, decumbent yellow setae and a few similar white setae interspersed; center with fragmented, longitudinal band with yellow, thick, decumbent setae; punctures with bristly, fine brownish seta; area between punctures on anterior half with short, decumbent brownish setae not obscuring integument, more abundant on anterior third. Sides of prothorax with sculpturing as on pronotum; with abundant, decumbent, thick, both yellow and white setae not obscuring integument; with a few long, erect brownish setae on posterior third. Prosternum coarsely, abundantly punctate; sides with abundant, thick, decumbent yellow setae, and a few similar white setae interspersed; central area with sparse yellow setae. Prosternal process with abundant, decumbent, yellow and white setae not obscuring integument; narrowest area 0.31× procoxal width. Ventral surface of mesothorax coarsely, abundantly punctate; sides with abundant, thick, decumbent, yellow and white setae; mesoventrite mostly with fine, decumbent, whitish pubescence not obscuring integument, and yellow setae interspersed; mesoventral process with abundant, fine whitish pubescence not obscuring integument, moderately narrowed centrally, and apical width 0.45× mesocoxal width. Ventral surface of metathorax coarsely, abundantly punctate laterally, punctures slightly finer on center of metaventrite; sides with abundant, decumbent, thick yellow and white setae interspersed; central area of metaventrite with abundant, fine, decumbent white setae not obscuring integument. Scutellum with dense, thick decumbent, yellow setae interspersed with a few white setae. ***Elytra.*** Slightly, gradually widened from humerus to posterior quarter, then roundly narrowed toward apex; in side view, distinctly arched from basal sixth; coarsely, deeply punctate, punctures coarser on wide central area; basal fifth with decumbent, thick, yellow and white setae not obscuring integument; with wide, oblique white pubescent band from anterior third to about middle, not reaching epipleural and sutural margins, and moderately abundant similar yellow setae interspersed; posterior quarter with abundant, decumbent, thick white and yellow setae interspersed; sutural region with decumbent, thick yellow and white setae interspersed; dorsal area between anterior fifth, oblique white pubescent band and sutural region, and area between middle and posterior quarter with brownish pubescence distinctly not obscuring integument. ***Legs.*** Femora, tibiae, and tarsi with abundant, decumbent, yellow and white setae partially obscuring integument, except ventral surface of protibiae with bristly, abundant brown pubescence, and ventral surface of meso- and metatibiae with bristly, thick yellowish-brown setae, denser apically.

Abdomen: Ventrites moderately coarsely and abundantly punctate, punctures gradually finer toward ventrite 5, except almost smooth apex of ventrites 1–4; sides of ventrites 1–5 and apex of 1–4 with abundant, short, decumbent yellow setae and short, decumbent white setae interspersed; remaining surface of ventrites with abundant pubescence composed of white setae but not obscuring integument.

Dimensions (mm): Total length, 5.90; prothoracic length, 1.80; anterior prothoracic width, 1.35; posterior prothoracic width, 1.40; maximum prothoracic width, 1.65; humeral width, 1.70; elytral length, 3.50.

Type Material: Holotype male from MEXICO, *Chiapas*: Tuxtla Gutiérrez – Sumidero, flowering tree, 9.VI.1991, F.W. Skillman leg. (FSCA, formerly FWSC). Paratype from MEXICO, *Chiapas*: Tepehuaje, El Mirador Sumidero Canyon, beating, 5.VII.2021, J. Rifkind, J. Leavengood and E. A. Martinez col. (LGBC).

Etymology: The species is named after the word used in Zoque language to refer to insects, *jejetam* (Sánchez Álvarez, 1963). The Zoque are an indigenous people of Mexico who live near the area where the species was collected.

Remarks: *Adetaptera jejetama*, sp. nov., resembles species of *Morrisia* Santos-Silva et al., 2019. However, the membranous wings are absent, as in the species of *Adetaptera* et al., 2019, while they are present and well formed in *Morrisia*. *Adetaptera jejetama* differs from the other species currently known in the genus by the elytra distinctly wider basally than the base of the prothorax, and elytra very coarsely punctate (about as wide, and finer in all other species).

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