

Description of a new species of *Hippopsis* Lepeletier & Audinet-Serville and comments on the identity of *H. quadrivittata* Breuning (Coleoptera, Cerambycidae, Lamiinae, Agapanthiini)

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Abstract. *Hippopsis sexlineata*, a new species from Ecuador is described. The identity of *Hippopsis quadrivittata* Breuning, 1940 *sensu auctorum* is discussed and considered to be *Hippopsis fractilinea* Bates, 1866.

Keywords. Longhorned beetles; Neotropical region; South America; Taxonomy.

INTRODUCTION

Hippopsis Lepeletier & Audinet-Serville, 1825 is a large genus of Agapanthiini Mulsant, 1839, including 44 species distributed from Canada to southern South America (Bezark, 2023; Monné, 2023; Monné & Nearn, 2023; Tavakilian & Chevillotte, 2022).

Breuning (1962) described *Hippopsis* as follows: body extremely elongate, cylindrical and very narrow in stature; antennae very slender, much longer than the body, at least the first segments fringed below; scape very long and slender; eyes slightly coarsely faceted, rather slightly emarginate; frons trapezoidal; pronotum from slightly transverse to longer than wide, convex, without lateral tubercles; elytra extremely elongate, very narrow, parallel-sided, convex, slightly wider than pronotum; head not retractile [*sic*]; legs short, with femora slightly clavate, tibiae with dorsal sulcus, and tarsal claws divergent.

The separation between *Hippopsis* and *Megacera* Audinet-Serville, 1835 has always been problematic and questionable. Galileo *et al.* (2017b) questioned the previous concept of these two genera (Bates, 1866; Breuning, 1962; Martins & Galileo, 2006) and reported: "Provisionally, we are keeping them as different genera and using the combination of two characters to separate them: head behind eyes distinctly elongate (2 or 3 times longer than length of upper eye lobes), and typically with frons clearly oblique in *Hippopsis*;

head behind eyes less elongate (usually about equal to length of upper eye lobe) and frons vertical in *Megacera*".

Here we describe a new species of *Hippopsis* from Napo Province, Ecuador. The type locality is found within a tropical mountain cloud forest with annual rainfall averages between 2,500 and 3,500 mm and the mean monthly temperatures ranging from 15 to 17°C. The forest consists of thick vegetation with tree trunks densely covered with epiphytes (Mariscal *et al.*, 2022).

During the process of identification of the new species, we encountered an issue with the definition of *Hippopsis quadrivittata* Breuning, 1940 by Galileo & Martins (1988a) and Martins & Galileo (2006). Therefore, we are addressing this problem herein.

MATERIAL AND METHODS

Photographs were taken at MZSP with a Canon EOS TD Mark II camera and Canon MP-E 65 mm f/2.8 1-5X macro lens, controlled by Zerene Stacker AutoMontage software. Measurements were taken in "mm" using measuring ocular Hensoldt/Wetzlar – Mess 10 in the Leica MZ6 stereomicroscope, also used in the study of the specimens. The terminology used herein for morphological structures follows Lawrence *et al.* (2010.)

The collection acronyms used in the text are as follows:

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JVCO – Josef Vlasak Collection, Schwenksville, Pennsylvania, USA;

MZSP – Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil.

RESULTS

AGAPHANTIINI Mulsant, 1839

***Hippopsis* Lepeletier & Audinet-Serville, 1825**

***Hippopsis sexlineata* sp. nov.**

(Fig. 1)

Description: Holotype female: Integument mostly blackish; ventral mouthparts brown, except palpomeres yellowish brown; scape dark brown; pedicel brown; antennomere III orangish brown on basal 6/7, blackish on apical seventh; antennomere IV orangish brown from base to near middle, then gradually blackish toward apex; antennomeres V–XI dark brown, except blackish apex of V–X. Elytral epipleural margin brownish. Femora mostly dark brown laterally, reddish brown dorsally and ventrally; tibiae reddish brown on basal 2/3, dark brown on apical third; tarsomeres I–II reddish brown on basal 2/3, black on apical third; tarsomeres III reddish basally, black on remaining surface; tarsomeres IV and basal half of tarsomeres V reddish brown, and apical half of V dark brown.

Head: Frons abundantly, finely punctate except smooth median groove; with dense yellow pubescence obscuring integument, except abundant pale-yellow pubescence not obscuring integument close to superior region of eyes, moderately abundant yellowish-white pubescence close to median groove, this area widened toward clypeus, and glabrous median groove; with one long, erect dark-brown seta close to eyes. Anterior region between antennal tubercles with abundant pale-yellow pubescence except glabrous median groove; remaining surface of vertex with dense, wide yellow pubescent band on each side, from area between antennal tubercles to prothorax, bands divergent and gradually widened toward prothorax, and abundant grayish-white pubescence not obscuring integument between yellow pubescent bands, except glabrous median groove; vertex moderately sparsely and coarsely punctate, except smooth median groove. Area behind eyes sparsely, finely punctate; with wide, longitudinal yellow pubescent band covering upper 2/3 of area behind lower eye lobe; remaining surface with abundant grayish-white pubescence not obscuring integument, except glabrous, subtriangular area close to yellow pubescent band and prothorax behind upper eye lobe and glabrous area close to prothorax behind lower eye lobe. Genae moderately sparsely, shallowly, finely punctate except nearly smooth apex and smooth subtriangular area close to eyes and frons; with dense yellow pubescence, except glabrous smooth area and almost glabrous apical area. Wide central area of postclypeus with dense yellow pubescence laterally close to frons, pubescence slightly

sparser centrally, and sparse yellowish-white pubescence close to anteclypeus; with a few long, erect setae on sides, setae dark brown except yellowish apical region. Sides of postclypeus glabrous. Labrum moderately sparsely, finely punctate; posterior half with very sparse brownish pubescence and transverse row of long, erect setae about its middle, setae dark brown basally, gradually yellowish brown toward apex; anterior half with moderately abundant, long, erect yellowish-brown setae, more abundant laterally. Outer surface of mandibles triangularly depressed on basal half; depressed area with abundant pubescence, pubescence yellowish white basally, gradually yellower toward anterior region, and one long, erect dark-brown seta interspersed; remaining surface of mandibles glabrous. Area between antennal tubercles and eyes with dense yellow pubescence laterally and moderately sparse yellowish-white pubescence on remaining surface. Antennal tubercles with abundant yellowish-white pubescence not obscuring integument. Gula mentum glabrous, except intermaxillary process with moderately abundant yellowish-white pubescence not obscuring integument. Distance between upper eye lobes 0.23 times distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.37 times distance between outer margins of eyes. Antennae 3.3 times elytral length, reaching elytral apex at base of antennomere VI. Scape densely, minutely punctate; with abundant grayish-white pubescence not obscuring integument, and long, erect dark-brown setae on posterior 3/4 of ventral surface. Pedicel with moderately abundant yellowish-white pubescence not obscuring integument and a few, both long and moderately short dark-brown setae ventrally. Antennomeres III–XI with moderately abundant whitish pubescence not obscuring integument, pubescence appearing to be whiter on dark areas due to the integument color; with long, erect dark-brown setae ventrally; dorsal apex of III–XI with a few long, erect dark-brown setae. Antennal formula based on length of antennomere III: scape = 0.94; pedicel = 0.05; IV = 0.99; V = 1.04; VI = 1.13; VII = 1.08; VIII = 1.09; IX = 1.10; X = 1.03; XI = 0.88.

Thorax: Prothorax slightly longer than wide; sides slightly divergent from anterolateral to posterolateral angles; anterior constriction well marked. Pronotum sparsely, coarsely punctate; central region transversely striate from anterior third to posterior fifth; with dense, wide, longitudinal yellow pubescent band on each side of middle, from anterior to posterior margin, and dense, narrow, longitudinal yellow pubescent band close to sides of prothorax; remaining surface with abundant grayish-white pubescence not obscuring integument, except narrow yellowish-white pubescent band centrally on anterocentral third; with a few long, erect dark-brown setae interspersed. Sides of prothorax moderately sparsely, coarsely punctate; with dense, wide yellow pubescent band about middle, from anterior constriction to near posterior margin; remaining surface with abundant grayish-white pubescence not obscuring integument. Prosternum transversely depressed near procoxal cavities;

with abundant grayish-white pubescence not obscuring integument. Prosternal process gradually widened from base to apex; with dense yellowish pubescence partially obscuring integument; narrowest area located close to base, 0.37 times procoxal width. Mesoventrite with dense grayish-white pubescence, pubescence slightly yellower close to mesocoxal cavities and mesoventral process. Mesanepisternum with dense yellow pubescence except dense grayish-white pubescence close to mesanepisternum; mesepimeron with dense pale-yellow pubescence

close to elytron and dense grayish-white pubescence on remaining surface; metanepisternum with dense yellow pubescence except apex with slightly sparser yellowish-white pubescence. Mesoventral process slightly narrowed centrally; narrowest area 0.67 times mesocoxal width; with dense yellowish pubescence except grayish-white pubescence close to margins. Metaventrite with dense yellow pubescent macula posteriorly close to metanepisternum, dense yellowish pubescence on large, subtriangular central area, from basal quarter to apex,



Figure 1. *Hippopsis sexlineata* sp. nov., holotype female: (A) Dorsal habitus; (B) Ventral habitus; (C) Lateral habitus; (D) Head, frontal view; (E) Head and pronotum, dorsal view.

except glabrous metathoracic discrimen, and dense grayish-white pubescence on remaining surface, appearing to be more yellowish white depending on light intensity and source. Scutellum with abundant yellowish-white pubescence partially obscuring integument. **Elytra:** Slightly, gradually narrowed from humeri to apex; apex concave, with outer and sutural angles distinctly spiniform, outer spine longer than sutural one; dorsal surface with three dense, longitudinal yellow pubescent bands fused posteriorly, innermost located close to suture, fused to central band about posterior sixth of elytron, central band widened basally, arched on its basal third, fused with outermost near elytral apex; remaining dorsal surface with abundant grayish-white pubescence not obscuring integument; sides with dense, longitudinal yellow pubescent band superiorly, basally inclined toward dorsal surface; remaining lateral surface with abundant grayish-white pubescence not obscuring integument except yellowish pubescence on epipleural margin; area close to epipleural margin on posterior quarter and apex with long, erect dark-brown setae. **Legs:** Femora with abundant yellowish-white pubescence not obscuring integument. Tibiae with abundant yellowish-white pubescence not obscuring integument on basal 2/3, except on ventral surface of protibiae; apical third of protibiae with moderately sparse brownish pubescence dorsally and laterally; ventral surface of protibiae with dense, bristly dark-brown pubescence; sides of apical third of meso- and metatibiae with sparse brownish pubescence; apical third of ventral surface of meso- and metatibiae with abundant, bristly yellowish-brown pubescence; apical third of dorsal surface of meso- and metatibiae with abundant, thick, moderately long, erect dark-brown setae. Dorsal surface of tarsomeres with sparse yellowish-white pubescence and long, erect dark-brown setae interspersed on I-III and apex of V. Metatarsomere I slightly shorter than II-III together.

Abdomen: Ventrites with dense greenish-yellow pubescence partially obscuring integument, except dense yellow pubescent band laterally, greenish-white pubescence laterally close to yellow pubescent band, and yellowish pubescence on apex of ventrites 4-5; posterior quarter with long, erect dark-brown setae interspersed. Apex of ventrite 5 emarginate centrally.

Variation: The longitudinal pubescent band on center of the pronotum is more distinct and reaches the posterior margin.

Dimensions (mm) (Holotype female/paratype female). Total length, 20.20/18.60; prothoracic length, 2.60/2.50; anterior prothoracic width, 2.30/2.25; posterior and maximum prothoracic width, 2.55/2.30; humeral width, 4.10/3.85; elytral length, 15.30/14.05.

Type material: Holotype female from ECUADOR, Napo: Cosanga, 2,100 m, on cut wood at night, 25.XI.2022, J. Vlasak leg. (MZSP). Paratype female, same data as holotype (JVCO).

Etymology: The specific epithet "sexlineata", from Latin "sex" (six) and "lineata" (lined), refers to the six distinct yellow pubescent bands on the dorsal side of elytra.

Remarks: The new species, *H. sexlineata* **sp. nov.**, fits in the key by Breuning (1962) at the alternative of couplet "10" with *H. quadrivittata* Breuning, 1940 and following toward the alternative of couplet "11". The alternative of couplet "10" has the first part very subjective: Disk of the pronotum distinctly transversely striate, leading to *H. quadrivittata*; disk of the pronotum not or slightly striate, leading to alternative of couplet "11". However, in the second part, he provided a more reliable feature: abdomen with a longitudinal pubescent band centrally, leading to *H. quadrivittata*; abdomen without a longitudinal pubescent band centrally, leading the alternative of couplet "11". As *H. sexlineata* **sp. nov.** has no central pubescent band on the abdominal ventrites, it cannot be confused with *H. quadrivittata* (Fig. 3L). In the alternative of couplet "11" *H. sexlineata* **sp. nov.** cannot be identified as *H. assimilis* Breuning, 1940 because the prothorax has six longitudinal pubescent bands (seven if considered the very narrow central pubescent band on the pronotum) (four in *H. assimilis* – five if considered the slightly distinct central pubescent band on the pronotum of some specimens), then following toward the alternative of couplet "12", with *H. truncatella* Bates, 1866 and *H. densepunctata* Breuning, 1940. The feature used by Breuning (1962) to separate these two species is very subjective: Elytra densely and slightly finely punctate, leading to *H. truncatella*; Elytra very densely and very finely punctate, leading to *H. densepunctata*. However, *H. truncatella* has the pronotum not transversely striate, not even slightly. Bates (1866) did not report the presence of striation in *H. truncatella* and Galileo & Martins (1988b) affirmed that the pronotum is not striate. Therefore, *H. sexlineata* **sp. nov.** differs from *H. truncatella* by the pronotum transversely striate and by the prothorax distinctly shorter than distance between humeri (about as long as the distance between humeri in *H. truncatella*). The new species differs from *H. densepunctata* by the lower eye lobes distinctly shorter than twice genal length (according to Breuning, 1940b, more than twice genal length in *H. densepunctata*), pronotum transversely striate (only punctate in *H. densepunctata*), and outer angle of the elytra distinctly spiniform (not spiniform in *H. densepunctata*). *Hippopsis sexlineata* **sp. nov.** also differs from *H. assimilis* and *H. quadrivittata* by the dorsal surface of elytra with six longitudinal yellow pubescent bands (four in *H. assimilis* and *H. quadrivittata*); from *H. truncatella* by the antennomeres III-IV bicolorous (antennomeres III-IV unicolorous in *H. truncatella*); and from *H. densepunctata* by the elytra distinctly bispinose (strongly oblique with only the outer angle projected in *H. densepunctata*).

The key by Martins & Galileo (2006) leads *H. sexlineata* **sp. nov.** to the alternative of couplet "8", with *H. pradierei* Guérin-Méneville, 1844 (Figs. 2C-2D) and *H. macrophthalma* Breuning, 1940 (Figs. 2A-2B). The new species differs from both especially by the truncate and bispinous elytral apex, while it has a long and single spiniform



Figure 2. *Hippopsis* spp. (A-B) *Hippopsis macrophthalma* Breuning, 1940, female from Brazil, Amazonas, São Paulo de Olivença: (A) Dorsal habitus; (B) Lateral habitus. (C-D) *Hippopsis pradierii* Guérin-Méneville, 1844, female from Brazil, Espírito Santo, Linhares: (C) Dorsal habitus; (D) Lateral habitus.

projection in *H. pradierii* and *H. macrophthalma*, similar to specimens of *H. fractilinea* (Fig. 3A-3K).

***Hippopsis quadrivittata* Breuning, 1940
(Fig. 3L)**

Hippopsis quadrivittata Breuning, 1940a: 82.

Remarks: Breuning (1940a) described *H. quadrivittata* based on a single specimen from Colombia. According to him, the innermost longitudinal yellow pubescent band on elytra is not distinct apically. The photograph of the holotype suggests that this pubescent band was grated. Breuning (1940a) did not clearly report the shape of the elytral apex. He made it clear that there was a short spine on the sutural angle, but the shape of the elytral apex was not provided. In the key to species of *Hippopsis* by Breuning (1962) this species was included in the alternative of couplet “8”, (translated): “Elytral sutural angle projected in spine”. Based on the photograph of the holotype (Fig. 3L), the elytral apex is distinctly transverse and concave, with outer and sutural angles spiniform.

Martins & Galileo (2006) included *H. quadrivittata* in the alternative of couplet “5”, (translated):

- “5(3). Elytral apex acuminate and projected, forming a single long spine; apex of metafemora in males reaching apex of abdominal ventrite 1. Peru, Ecuador, Brazil (Amazonas), Bolivia..... *H. fractilinea* Bates, 1866
- Elytral apex obliquely truncate and projected in short spine; apex of metafemora in males reaching apex of abdominal ventrite 2. Colombia, Ecuador*H. quadrivittata* Breuning, 1940”

However, *H. quadrivittata sensu* Martins & Galileo (2006) (Figs. 3A-3K) clearly disagrees with the true *H. quadrivittata* (Fig. 3L), which has a different elytral pubescent pattern and a distinctly different elytral apex. See remarks under *H. fractilinea*.

***Hippopsis fractilinea* Bates, 1866
(Figs. 3A-3K, 3M)**

- Hippopsis fractilinea* Bates, 1866: 41.
- Hippopsis biapicata* Breuning, 1940a: 81.
- Hippopsis fractilinea*; Galileo & Martins, 1988a: 198 (syn.); Martins & Galileo (2006): 480 (key), fig. 2; Lingafelter et al., 2017: 200; Galileo et al., 2017a: 176 (key).
- Hippopsis quadrivittata*; Galileo & Martins, 1988a: 198; Martins & Galileo (2006): 480 (key), fig. 5; Galileo et al., 2017a: 176 (key).

Remarks: Bates (1866) described *H. fractilinea* based on syntypes from Brazil (Amazonas). Breuning (1940a) described *H. biapicata* (Fig. 3M) based on a single specimen from Bolivia and reported that it differs from *H. fractilinea* by the lower eye lobes twice longer than the gena. Galileo & Martins (1988a) synonymized *H. biapicata* with *H. fractilinea* (translated): “The features mentioned by Breuning (1962: 8) [redescription] separating *H. biapicata* from *H. fractilinea* is the relation between the length of lower eye lobe and the genae: twice the length of the genae in *H. biapicata* and less than twice the length of the genae in *H. fractilinea*. This is a secondary sexual feature, which invalidates the distinction between species. Furthermore, D.S. Napp (*pers. comm.*) examined the two holotypes [*sic* – syntypes of *H. fractilinea*] at the “Muséum National d’Histoire Naturelle”, Paris, and considered them as belonging to the same species. *Hippopsis fractilinea* and *H. quadrivittata* have elytral color pattern similar and are separated by the appearance of the apex of the elytra”. Still, according to Galileo & Martins (1988a), *H. quadrivittata* (translated): “The holotype [of *H. quadrivittata*] was not located by D.S. Napp (*pers. comm.*) at the “Muséum National d’Histoire Naturelle”, Paris”.

The holotype of *H. quadrivittata* was photographed in Paris by Jesus Santiago Moure and Gérard L. Tavakilian

(Fig. 3L). Evidently, the specimens considered as being *H. quadrivittata* by Galileo & Martins (1988a) and Martins & Galileo (2006) are specimens of *H. fractilinea*. The elytral apex in *H. fractilinea* is very variable (Figs. 3A-3K, 3M).

Also, the width of the longitudinal yellow pubescent bands, vertex, pronotum, and elytra, are somewhat variable, and not related to the geographical distribution. The specimens in Figures 3A-3G were identified by Ubirajara

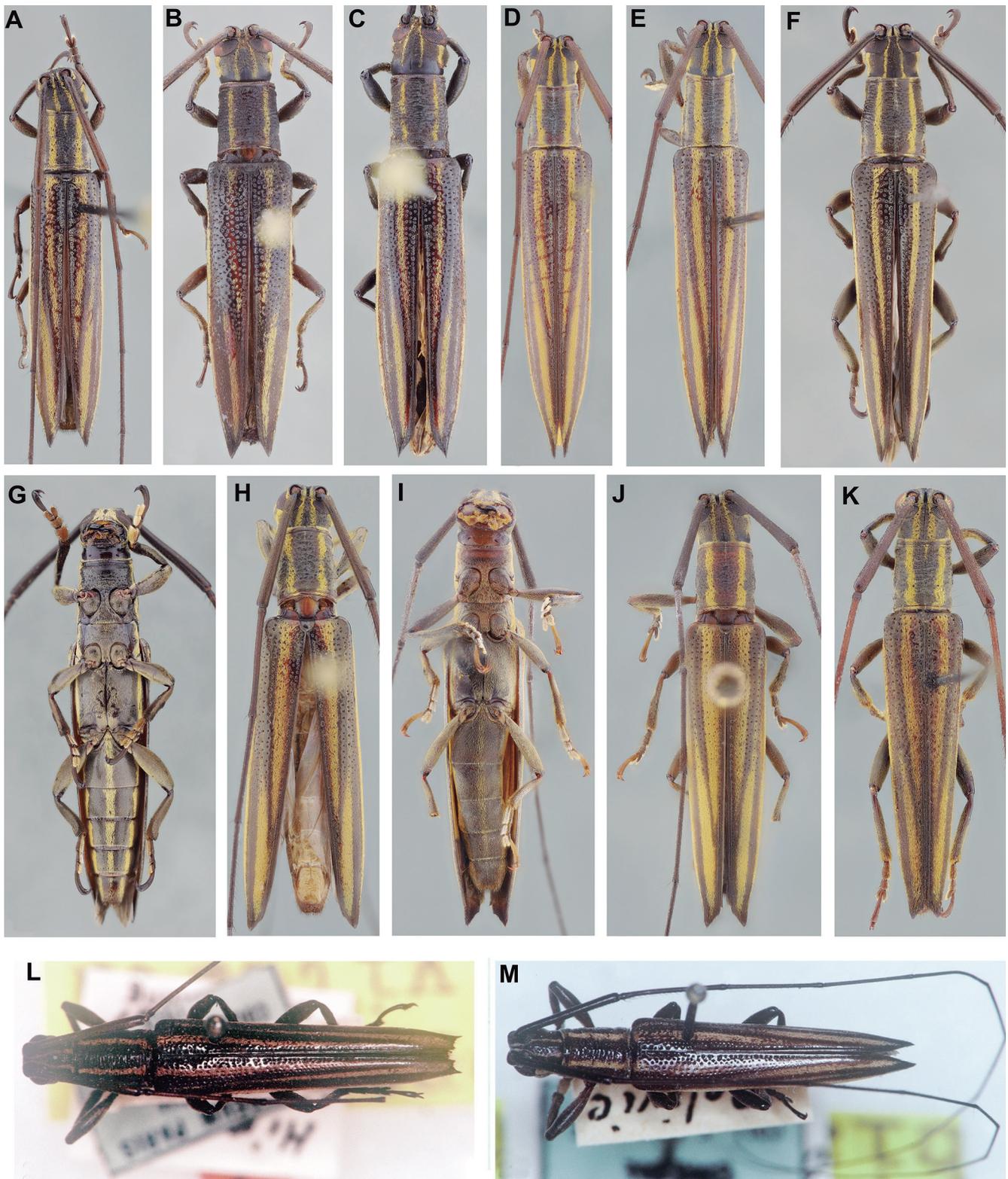


Figure 3. *Hippopsis* spp. (A-K) *Hippopsis fractilinea* Bates, 1866: (A) Female from Bolivia, Santa Cruz, Buena Vista, dorsal habitus; (B) Male from Brazil, Amazonas, Benjamin Constant, dorsal habitus; (C) Female from Brazil, Amazonas, Benjamin Constant, dorsal habitus; (D) Female from Peru, Satipo, dorsal habitus; (E) Female from Peru, Satipo, dorsal habitus; (F-G) Male from Brazil, Amazonas, Tefé, dorsal and ventral habitus; (H) Female from Ecuador, Napo, Limoncocha, dorsal habitus; (I-J) Female from Ecuador, Napo, Limoncocha, dorsal and ventral habitus; (K) Female from Ecuador, Orellana, Pompeya, dorsal habitus. (L) Holotype of *H. quadrivittata* Breuning, 1940, dorsal habitus, by Jesus Santiago Moure. (M) Holotype of *H. biapicata* Breuning, 1940, dorsal habitus, by Jesus Santiago Moure.

R. Martins de Souza as *H. fractilinea* at MZSP collection and the specimens in Figures 3H-3K as *H. quadrivittata*.

Currently, *H. fractilinea* is known from Ecuador, Brazil (Amazonas, Pará, Rondônia), Peru, and Bolivia (Cochabamba, Santa Cruz), while *H. quadrivittata* from Colombia, Ecuador, and French Guiana (Monné, 2023; Tavakilian & Chevillotte, 2022). It is probable that the record of *H. quadrivittata* from French Guiana was based on misidentification of *H. fractilinea*.

Material examined: ECUADOR, *Orellana*: Pompeya, 1 ♀, V.1965, Peña leg. (MZSP). *Napo*: Limoncocha, 2 ♀♀, 15-28.VI.1976, S. & J. Peck leg. (MZSP). PERU, *Junín*: Satipo, 2 ♀♀, no date indicated, A. Maller leg. (MZSP). BOLIVIA, *Santa Cruz*: 2.7 km SSE Buena Vista, Hotel Flora & Fauna, 430 m, 1 ♀, 05-15.XI.2001, M.C. Thomas & B.K. Dozier leg. (MZSP); 4-6 km SSE Buena Vista, Hotel Flora & Fauna, 1 ♀, 22-31.X.2002, Wappes & Morris leg. (MZSP). BRAZIL, *Amazonas*: Benjamin Constant, Rio Javary, 1 ♀ (MZSP 54745), V.1963, formerly Diringshofen collection (MZSP); 1 ♀ (MZSP 54746), XI.1963, formerly Diringshofen collection (MZSP); Tefé, 1 ♂ (MZSP 54747), III.1959, formerly Diringshofen collection (MZSP).

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