

A tribal transfer and four new distributional records in South American Cerambycidae (Coleoptera), with notes on *Stenoeme aguilari* Galileo & Martins and *Stenoeme bellarmini* Gounelle

Antonio Santos-Silva^{1,3} & Weliton D. Silva^{2,4}

¹ Universidade de São Paulo (USP), Museu de Zoologia (MZUSP). São Paulo, SP, Brasil.

² Universidade de São Paulo (USP), Escola Superior de Agricultura "Luiz de Queiroz" (ESALQ), Departamento de Entomologia e Acarologia (LEA). Piracicaba, SP, Brasil.

³ ORCID: [0000-0001-7128-1418](https://orcid.org/0000-0001-7128-1418). E-mail: toncriss@uol.com.br

⁴ ORCID: [0000-0001-9035-204X](https://orcid.org/0000-0001-9035-204X). E-mail: wdsilv@gmail.com

Abstract. In this study, we document new Brazilian state records for the cerambycid beetles *Eburadacrystola pickeli* (Melzer, 1928) (Cerambycinae, Eburini), *Phygomelitta triangularis* (Fuchs, 1961) (Cerambycinae, Rhinotragini), and *Oreodera bituberculata* Bates, 1861 (Lamiinae, Acrocini). Additionally, *Stenoeme aguilari* Galileo & Martins, 2010 (Cerambycinae, Oemini) is recorded for the first time in Brazil. We also discuss the probable synonymy between *Stenoeme aguilari* and *S. bellarmini* Gounelle, 1909. Furthermore, we propose the transfer of *Piezosecus* Martins & Galileo, 2003, from Piezocerini to Hesperophanini (Hesperophanina), examining the features currently used to define Hesperophanini and the differences between it and Piezocerini.

Keywords. Pheromone traps; Longhorned beetles; Neotropical region; Taxonomy.

INTRODUCTION

The fragility of the definitions and limits of tribes within the large beetle family Cerambycidae is well known and has been discussed in various works (e.g., Ślipiński & Escalona, 2013, 2016). Despite the ongoing discussion, the current classification still facilitates the process of identifying specimens, as it helps to narrow down possibilities, particularly when dealing with little-known or potentially new species. However, some species exhibit aberrant features concerning their assigned genera and/or tribes, which may inadvertently lead to misclassifications, including the erroneous description of new species. While overall appearance often aids identification, very similar species, especially when viewed dorsally, may belong to different tribes.

These challenges were encountered during the identification of cerambycid specimens collected in Southeastern Brazil. In this study, we propose the transfer of *Piezosecus* Martins & Galileo, 2003, a species morphologically resembling Piezocerini, to Hesperophanini (Hesperophanina). Additionally, we document new distributional records for

four species in Brazil and examine the probable synonymy between *Stenoeme aguilari* Galileo & Martins, 2010, and *S. bellarmini* Gounelle, 1909.

MATERIAL AND METHODS

Specimens representing new distributional records were captured opportunistically during field bioassays targeting other cerambycid species using attractant pheromones. Pheromone lures, held in the central open slot of cross-vane intercept panel traps (black corrugated plastic) with internal surfaces coated with Fluon® (Insecta-Slip, BioQuip Products Inc., Rancho Dominguez, CA, USA), were deployed in forest remnants of the Atlantic Forest and Cerrado biomes within the state of São Paulo, Brazil. Detailed descriptions of this trapping method have been published previously (e.g., Silva *et al.*, 2024).

Specimens from additional sources were also examined, and their records are provided.

Photographs of cerambycid beetles were taken using a Canon EOS TD Mark II camera equipped with a Canon MP-E 65 mm f/2.8 1-5X macro lens.

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The images were processed with Zerene Stacker Auto-Montage software. Measurements were recorded in millimeters (mm) using a Hensoldt/Wetzlar ocular micrometer-Mess 10 in a Leica MZ6 stereomicroscope, which was also employed for the study of the specimens.

The following acronym is used in the text: **MZSP** – Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil.

RESULTS

CERAMBYCINAE Latreille, 1802

EBURIIINI Blanchard, 1845

Eburodacrystola Melzer, 1928

Eburodacrystola pickeli (Melzer, 1928)

(Fig. 1A)

Eburodacrys (*Eburodacrystola*) *pickeli* Melzer, 1928: 146.

Remarks: Originally described based on syntypes from the Brazilian states of Pernambuco and Ceará. A lectotype was designated by Monné *et al.* (2017), using a male specimen from Pernambuco. Presently, its distribution encompasses Bolivia and several Brazilian states, including: Pará, Rondônia, Maranhão, Rio Grande do Norte, Piauí, Ceará, Pernambuco, Sergipe, Mato Grosso, Mato Grosso do Sul, and Minas Gerais (Bezark, 2024a; Monné, 2024a; Tavakilian & Chevillotte, 2023).

Material examined: BRAZIL, *São Paulo* (new state record): Valentim Gentil (20°22'25.5"S, 50°05'17.7"W), [pheromone trap], 1 male (MZSP 61425), 20.X.2017, W.D. Silva leg. (MZSP).

HESPEROPHANINI Mulsant, 1839

HESPEROPHANINA

Piezosecus Martins & Galileo, 2003

(Figs. 1B-1G, 2A-2B, 2H, 3A-3C)

Piezosecus Martins & Galileo, 2003: 225.

Remarks: Given the complexities inherent in taxonomic classification within Cerambycidae tribes, defining features of these taxa often pose challenges, particularly due to the reliance on genera restricted to specific geographic regions. To enhance clarity and avoid excessive cross-referencing, we have consolidated the primary definitions of Hesperophanini here. This task is complicated by the limited availability of some works, many of which are not accessible online or in English. Therefore, we have included translations of relevant descriptions from various sources, when necessary, to provide a comprehensive overview of Hesperophanini without requiring the reader to consult multiple references. Currently, establishing a precise definition for Hesperophanini is not feasible without a comprehensive revision. However, it is possible to delineate the differences between Hesperophanini, as currently defined, and Piezocerini.

Mulsant (1839) defined Hesperophanini as follows (translated): Prothorax without lateral tubercles, subdepressed or not very convex in some species, while globose in others. Maxillary palpi sometimes poorly developed. Eyes usually slightly notched. Femora compressed and not abruptly bulged into a club in those who have a slightly convex prothorax, sometimes clavate among those with a globular one. Elytra with sutural angle unarmed. Body usually elongated. Mulsant included the following genera: *Asemum* Eschscholtz, 1830 (currently included in *Asemini*), *Criocephalus* Mulsant, 1839 (currently a junior synonym of *Arhopalus* Audinet-Serville, 1834, and included in *Asemini*), *Solenophorus* Mulsant, 1839 (currently a junior synonym of *Stromatium* Audinet-Serville, 1834), and *Hesperophanes* Dejean, 1835. This original definition of Hesperophanini is problematic as it also included genera belonging to the tribe *Asemini*.

The key to the genera of Hesperophanini from Mulsant (1839) already made it possible to separate the two tribes: eyes very slightly notched, not surrounding the base of the antennae, leading to *Asemum* and *Criocephalus*; eyes deeply notched, leading to *Solenophorus* and *Hesperophanes*. However, some other details of the original description do not align with the current species included in Hesperophanini. For example, the sutural angle of elytra may be slightly projected (*e.g.*, some species of *Stromatium* and all of *Anatinomma* Bates, 1892) or may not be slightly projected (*e.g.*, *Austranoplium* Chemsak & Linsley, 1963); and the prothorax may have lateral tubercle (*e.g.*, *Corupella* Martins & Napp, 2007 and *Cerasphorus* Audinet-Serville, 1834) or lack them (*e.g.*, *Hesperophanes*).

Lacordaire (1868) defined Hesperophanini as follows (translated): Ligula membranous, bilobed, or notched. Palpi short, with the maxillary palpi usually slightly longer than the labial palpi; apical palpomere triangular. Mandible short (except in males of *Gnatholea*), arched, and acute apically. Head most often not very protruding; antennal tubercles weakly indented in most species; genae extremely short (except in a few *Zoodes*). Antennae with more or less bristling, fine setae, rarely spiny, longer than the body, at least in males. Eyes coarsely faceted, voluminous, close together above, deeply notched; lower eye lobes very large, strongly protruding above the antennal tubercles frontally. Prothorax with or without lateral tubercles, pronotum often tuberculate. Scutellum small. Elytra basally wider than the prothorax, more or less elongated. Legs of variable length; procoxae transversely oval or subglobose, more or less angular laterally; pro- and mesocoxal cavities open laterally. Mesoventral process curved backward, notched apically. Prosternal process rarely very narrow. Body usually elongated. While this definition remains one of the more precise for species in various regions worldwide, it poses certain difficulties. For example, in *Ochrus* Lacordaire, 1869 (originally described in *Oemini*), the maxillary palpi are distinctly longer than the labial palpomeres, and some genera initially included by him are now excluded from Hesperophanini.

According to Gahan (1906) on Hesperophanini: "Gula without mentigerous process, except in *Hesperophanes*, in which it is very short; ligula membranous; eyes large,



Figure 1. (A) *Eburodacrystola pickeli* (Melzer, 1928), male (MZSP 61425) from Brazil (São Paulo, Valentim Gentil), dorsal habitus. (B) *Piezosecus tymaiuba* Martins & Galileo, 2003, holotype male, dorsal habitus. (C-G) *Piezosecus tymaiuba*, male (MZSP 61424) from Brazil (Espírito Santo, Santa Teresa): (C) Lateral habitus; (D) Dorsal habitus; (E) Ventral habitus; (F) Head, lateral view; (G) Ventral mouthparts.

deeply emarginate; antennae ciliated, longer than the body in the ♂ [male]. Prothorax unarmed at the sides. Elytra rather long, more or less parallel-sided. Front coxae subglobular, more or less angulate at the side; their acetabula open posteriorly; the intercoxal process either very little or not at all dilated at the end. Acetabula of

middle coxae extended to the epimera. First abdominal sternite not longer than the second except in the middle and at the sides. Wing-venation reduced by the disappearance either of vein Cu 2 or of the posterior branch of Cu 1, probably the latter; Cu 2 in that case having lost its connection with A 1 appears simply as a branch of Cu 1."

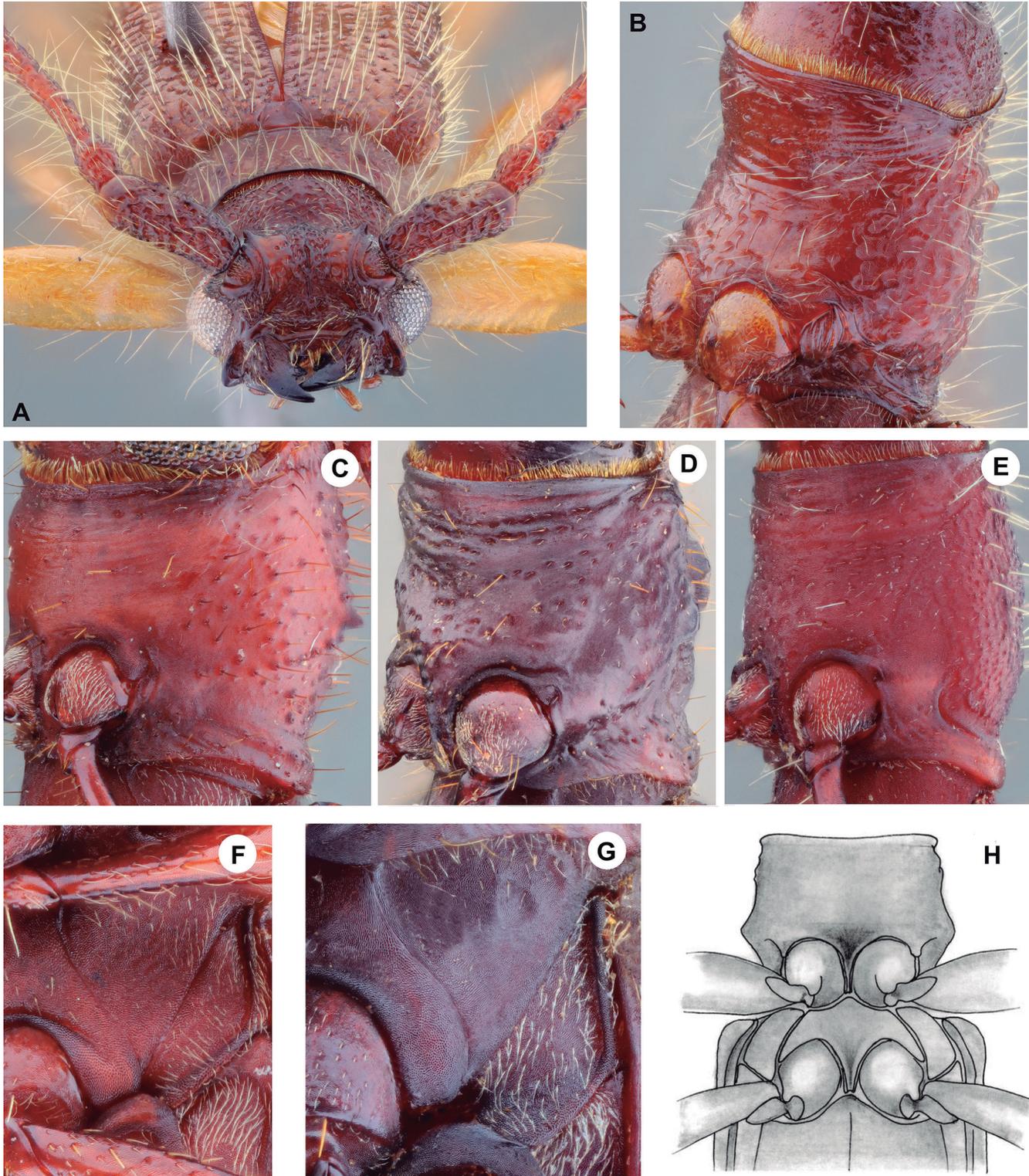


Figure 2. (A-B) *Piezosecus tymaiuba* Martins & Galileo, 2003, male (MZSP 61424) from Brazil (Espírito Santo, Santa Teresa): (A) Head, frontal view; (B) Procoxal cavity. (C-E) Procoxal cavity: (C) *Piezocera bivittata* Audinet-Serville, 1834, female (MZSP 61273) from Brazil (São Paulo, Ribeirão Preto); (D) *Hemilissa gummosa* (Perty, 1832), male (MZSP 61274) from Brazil (São Paulo, Indiana); (E) *Gorybia martes* Pascoe, 1866, female (MZSP 61275) from Brazil (Santa Catarina, Corupá). (F-G) Mesocoxal cavity: (F) *Haruspex brevipes* (White, 1855), female (MZSP 61276) from Brazil (Santa Catarina, Timbó); (G) *Hemilissa gummosa*, male (MZSP 61274) from Brazil (São Paulo, Indiana). (H) *Piezosecus tymaiuba*, ventral view, from Martins & Galileo (2003).

This description agrees well only to specimens from the region studied by Gahan (1906). For example, the prothorax may or may not have distinct lateral tubercles and the abdominal ventrite 1 may be distinctly longer than ventrite 2 (e.g., *Malcho* Mondaca & Beéche, 2022).

Linsley (1962) defined *Hesperophanini* as follows: "Head moderately short; antennae ciliated, longer than body in male, segments simple or rarely spinose at apex, second segment short; eyes large, coarsely faceted, deeply emarginate; ligula membranous; palpi usually unequal in length. Pronotum rounded or tuberculate at sides; prosternum with intercoxal process not dilated behind coxae; anterior coxae subglobular, their cavities scarcely to broadly angulate externally, open posteriorly; intermediate coxal cavities usually widely open to epimera. Elytral apices rounded, usually unarmed. Legs with femora sometimes clavate." This is a description based on genera of *Hesperophanini* from North America. However, only a few features do not agree with genera from other regions, such as the shape of the elytral apex. It is worth noting that *Hesperophanini sensu* Linsley (1962) encompassed *Eburiini*, *Graciliini*, and *Bothriospilini*.

Finally, Martins (1999) briefly described *Hesperophanini* as follows (translated): Upper eye lobes present, separated by a distance equal to twice the width of one upper lobe. Lower eye lobes large, occupying entire side

of head. Galea and lacinia developed; apical palpomeres securiform. Mentum as wide as twice its length, with transverse sulcus centrally. Ligula emarginate. Antennae filiform, unarmed. Scape subcylindrical, without basal depression. Antennomere III not longitudinally sulcate. Prothorax often without lateral tubercles. Prosternal process arched, without lateral projections. Procoxal cavities angulated laterally, open posteriorly. Mesoventral process with lateral projections, notched apically. Metanepisternum without glandular opening. Base of epipleura without spicule. Procoxae with slightly distinct tab. Femora not linear, unarmed apically. Parameres separated, distinct. Digestive tube of larvae with crop. This description applies only to South American genera and, even so, with exceptions. For example, the distance between the upper eye lobes may be much shorter than twice the width of one upper lobe (e.g., *Daramus* (*Daramus*) Fairmaire, 1892, and *Hespereburia* Tavakilian & Monné, 1991; the latter pointed out in Martins & Galileo, 1999); antennomere III may be slightly dorsally carinate, as in *Catoptronotum* Zajciw, 1959, and *Hesperophanoschema* Zajciw, 1970, or even distinctly carinate, as in *Liostola* Zajciw, 1962; and antennae may not be filiform (e.g., *Daramus* (*Daramus*)).

According to Linsley (1963), *Piezocerini* has the mesocoxal cavities closed laterally, while Martins (2003)

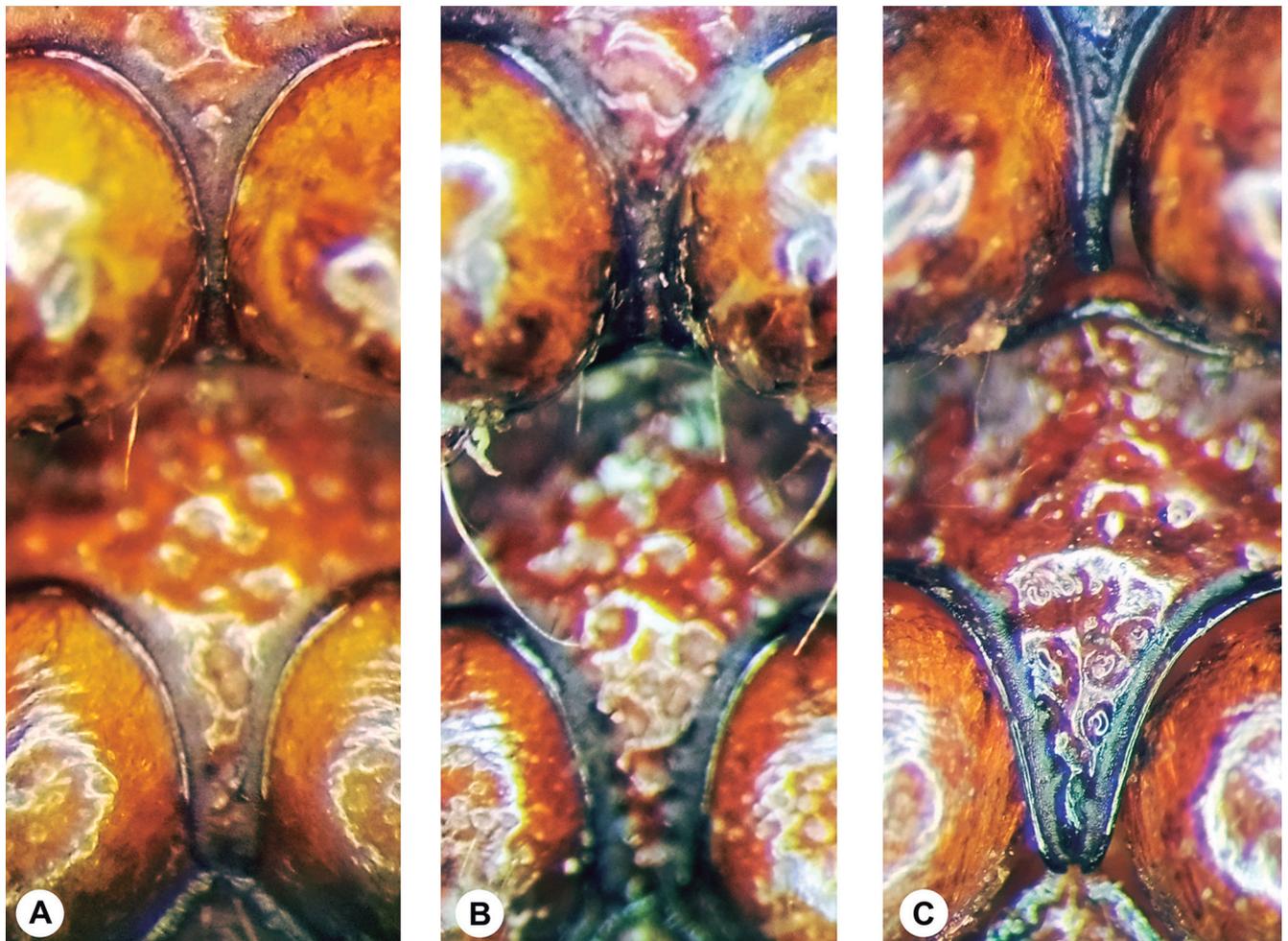


Figure 3. *Piezosecus tymaiuba* Martins & Galileo, 2003, prosternal and mesoventral processes: (A) Paratype male (MZSP 61419) from Brazil (Espírito Santo, Córrego do Itá); (B) Paratype male (MZSP 61418) from Brazil (Espírito Santo, Córrego do Itá); (C) Holotype male (MZSP 61272) from Brazil (São Paulo, Araras).

reported them as open. However, our observations confirm that they are indeed closed (Figs. 2F-2G).

While some genera within Hesperophanini exhibit the basal flagellomeres bicarinate dorsally, the carina is not strongly marked and not keeled as observed in Piezocerini. Additionally, in Piezocerini, the ventral surface of the basal antennomeres is often also longitudinally carinate, at least near the inner surface, a feature not observed in Hesperophanini. Furthermore, differentiation between Piezocerini and Hesperophanini can be based on at least two other features: the shape of the procoxal and mesocoxal cavities. The procoxal cavities in Hesperophanini (Fig. 2B) are open laterally, sometimes strongly so, while they are closed in Piezocerini (Figs. 2C-2E). In Piezocerini, at most, the procoxal cavities are open close to coxa, and the remaining surface is distinctly closed (Fig. 2C). The mesocoxal cavities are variable laterally in the genera currently included in Hesperophanini: they may be closed (e.g., *Liostola* Zajciw, 1962); open (e.g., *Turcmenigena* Melgunov, 1894); or imperfectly closed (e.g., *Trichoferus* Wollaston, 1854). Conversely, in Piezocerini, while they also show some variability, they are never perfectly open laterally (Figs. 2F-2G).

We examined the mesocoxal cavities in 14 genera of Piezocerini. They are distinctly closed in: *Acruspex* Martins, 1976; *Alienosternus* Martins, 1976; *Cicatrilocera* Martins, 1976; *Colynthaea* Thomson, 1878; *Gorybia* Pascoe, 1866; *Haruspex* Thomson, 1864 (Fig. 2F); *Hemilissa* Pascoe, 1858 (Fig. 2G); *Pharcidodes* Martins, 1976; *Piezasteria* Martins, 1976; *Piezocera* Audinet-Serville, 1834; and *Pseudocolynthaea* Martins, 1976. They are imperfectly closed in: *Piezarina* Martins, 1976; *Thyellocerus* Martins, 1976; and *Zelliboria* Lane, 1951. Although we have not examined specimens of *Migmocera* Martins, 1976, the figure included in the original description of the genus shows the mesocoxal cavity distinctly closed laterally. We do not know the shape of the mesocoxal cavities in *Piezogenista* Martins, 1976. Based on figures of *Migorybia santossilvai* García, Botero & Martínez, 2019, they are closed or, at most, imperfectly closed.

Linsley & Chemsak (1984) provided a clear explanation of the shape of the mesocoxal cavities: "There has been much confusion in the interpretation of this character, and we hope that our definition will aid in stabilization of usage. Figure 1 diagrammatically illustrates the three conditions most commonly found. The upper and lower figures clearly indicate the open and closed situations. The middle figure shows the type of condition that has caused most of the past disagreement. In spite of the fact that a small opening exists between the coxal cavity and epimeron, the epimeron is not in direct contact with the cavity, and we consider this as being closed [herein, named imperfectly closed]. Therefore, we define the cavities as open when the epimeron is directly between the two sclerites and in direct contact with the cavity." Since *Piezosecus* lacks distinct longitudinal carinae on both the dorsal and ventral sides of its antennae and possesses open lateral pro- and mesocoxal cavities, a feature absent in Piezocerini, we propose its transfer to Hesperophanini.

Sama (2008) divided Hesperophanini into two subtribes. Hesperophanini (Daramina) was defined as follows: "Similar to Hesperophanini [*sic*, Hesperophanina] but mandibles without a fringe of hair along the inner edge; palpi unequal, maxillary palpi very long, 1st segment hardly shorter than 2nd; last segment of maxillary and labial palpi securiform, strongly dilated at apex, chiefly in male; ligula reduced, deeply bilobed, without lateral lobes; prosternal process subtriangular in front, laminiform between coxae, coxal cavities widely angulate laterally; mesonotum without stridulatory plate, with median endocarina; mesocoxal cavities widely open externally to epimera. Metendosternite with lateral arms elongate, longer than lateral laminae, which are short, moderately enlarged, truncate apically, divided by a deep notch. Male genitalia: ventral arc (IX sternite) fork shaped; dorsal arc (IX tergite) absent. Larva conspicuously elongate, with dorsal ampullae protruding." At least some of these features are present in American Hesperophanini, including in *Piezosecus*. However, based especially on the length and shape of the maxillary palpomeres, we are including *Piezosecus* in Hesperophanini (Hesperophanina).

According to Martins & Galileo (2003) (translated): *Piezosecus* belongs to the Piezocerina subtribe and is separated from all genera with open anterior procoxal cavities by the prosternal and mesosternal processes, which are markedly acuminate toward the apex. However, as defined and illustrated in figure 2 from Martins & Galileo (2003) (see Fig. 2H), the shape of the pro- and mesosternal processes is not a distinguishing feature. In fact, the shape and width vary within the type series (Figs. 3A-3C).

Material examined: BRAZIL, *Minas Gerais*: Parque Estadual Rio Doce, 1 male (MZSP 61420), 25.IX-13.X.2013, L. Migliore leg. (MZSP). *Espírito Santo*: Córrego do Itá, 2 paratypes male (MZSP 61418; MZSP 61419), X.1954, W. Zikán leg. (MZSP); Santa Teresa (19°55'47.80"S, 40°44'50.90"W), [attracted to light], 1 male (MZSP 61424), 2020-2021, F.Z. Madalon leg. (MZSP). *São Paulo*: Araras, holotype male (MZSP 61272), 13.X.1981, S.M. Nunes leg. (MZSP).

OEMINI Lacordaire, 1868
***Stenoeme* Gounelle, 1909**
***Stenoeme aguilari* Galileo & Martins, 2010**
(Figs. 4A-4D)

Stenoeme aguilari Galileo & Martins, 2010: 32.

Remarks: This species was described based on a single male from Paraguay (Concepción). Currently, it remains known only from the holotype (Bezark, 2024a; Monné, 2024a; Tavakilian & Chevillotte, 2023). Galileo & Martins (2010) compared *S. aguilari* with *S. bellarmini* Gounelle, 1909, and *S. annularis* Martins, 1980 (Fig. 4E) (translated): *Stenoeme aguilari* differs from *S. annularis* by the unicolorous antennae (flagellomeres reddish with dark apex in *S. annularis*), and black body and legs [actually, dark

brown] (reddish brown [actually, partially brown, partially dark brown, and partially orangish brown, with the colors variable in area and disposition in the specimens] in *S. annularis*). It differs from *S. bellarmini* by the general black and dark brown color [actually, dark brown], with the color of the elytral apex not differing from the remaining elytral surface (body brownish-ochraceous and the elytral apex is darker than the remaining elytral surface in *S. bellarmini*).

Galileo & Martins (2010) did not comment on the dorsal surface of metafemora having no erect and somewhat spatulate setae (Fig. 4D), whereas they are present in *S. annularis* (Fig. 4E). This feature alone allows for the separation of *S. aguilari* from *S. annularis* without relying on colors. It is noticeable that the figure of the ho-

lotype of *S. bellarmini* on Bezark (2024b) is from “Santo Antonio da Barra,” while Gounelle (1909) described it from Condeúba, a municipality in the Brazilian state of Bahia. However, Santo Antonio da Barra has been named Condeúba since 1889. Comparing the dorsal colors in the holotype of *S. bellarmini* (see photograph on Bezark, 2024b) with those in the holotype of *S. aguilari* (Fig. 4B), we cannot see a reliable difference: they appear to be the same or nearly so. Furthermore, we examined specimens of *S. aguilari* with the elytral color distinctly lighter (Fig. 4A) than that in the holotype, suggesting that the colors are variable in the species. As the original description of *S. bellarmini* is short and does not provide essential details, including the presence or absence of erect setae on the dorsal surface of metafemora, we can only



Figure 4. *Stenoeme* spp. (A-D) *Stenoeme aguilari* Galileo & Martins, 2010: (A) male (MZSP 61426) from Brazil (São Paulo, Piracicaba), dorsal habitus; (B) Holotype male from Paraguay, dorsal habitus; (C) Holotype male, ventral habitus; (D) Holotype male, metafemur, lateral view. (E-G) Metafemur, lateral view: (E) *Stenoeme annularis* Martins, 1980, paratype female (MZSP 61421) from Brazil (Bahia); (F) *Stenoeme furca* Nascimento & Bravo, 2018, paratype male (MZSP 61422) from Brazil (Bahia); (G) *Stenoeme kempfi* Martins, 1980, paratype male (MZSP 61423) from Brazil (Espírito Santo).

provisionally differentiate it from *S. aguilari* by the narrowly darker elytral apex in the former. *Stenoeme furca* Nascimento & Bravo, 2018 (Fig. 4F) also has no erect setae on the dorsal surface of the metafemora. However, it differs from *S. aguilari* especially by the metafemoral club being distinctly stouter. *Stenoeme kempfi* Martins, 1988 (Fig. 4G) differs from *S. aguilari* by the metafemora being stouter and with distinct erect setae dorsally; and *S. iheringi* Gounelle, 1909 (see photograph on Bezark, 2024b; species examined only through the photograph of the holotype) by the prothorax in male not being constricted posteriorly.

Material examined: BRAZIL (new country record), São Paulo: Piracicaba (22°42'37.10"S, 47°37'25.84"W), [pheromone trap], 3 males (MZSP 61426; MZSP 61429; MZSP 61430), 24.X.2019, W.D. Silva leg. (MZSP).

RHINOTRAGINI Thomson, 1861
***Phygomelitta* Clarke, 2014**
***Phygomelitta triangularis* (Fuchs, 1961)**
(Fig. 5A)

Epimelitta triangularis Fuchs, 1961: 6.
Phygomelitta triangularis; Clarke, 2014: 361.



Remarks: This species was described based on specimens from Brazil (Mato Grosso do Sul and Santa Catarina). Currently, it is known from Brazil (Mato Grosso do Sul, Paraná, Santa Catarina, and Rio Grande do Sul) (Bezark, 2024a; Monné, 2024a; Tavakilian & Chevillotte, 2023).

Material examined: BRAZIL, São Paulo (new state record): Piracicaba (22°42'37.10"S, 47°37'25.84"W), [pheromone trap], 1 female (MZSP 61427), 20.XI.2019, W.D. Silva leg. (MZSP).

LAMIINAE Latreille, 1825
ACROCININI Swainson, 1840
***Oreodera* Audinet-Serville, 1835**
***Oreodera bituberculata* Bates, 1861**
(Fig. 5B)

Oreodera bituberculata Bates, 1861: 51.

Remarks: This species was initially described based on syntypes from Brazil (Amazonas and Pará) and French Guiana. Currently, its distribution extends across Colombia, Ecuador, Peru, Bolivia, Guyana, French Guiana, Brazil (Amazonas, Roraima, Amapá, Pará, Acre, Rondônia, Maranhão, Goiás, and Mato Grosso), and Paraguay (Bezark,

Figure 5. (A) *Phygomelitta triangularis* (Fuchs, 1961), female (MZSP 61427) from Brazil (São Paulo, Piracicaba), dorsal habitus. (B) *Oreodera bituberculata* Bates, 1861, female (MZSP 61428) from Brazil (São Paulo, Valentim Gentil), dorsal habitus.

2024a; Monné, 2024b; Tavakilian & Chevillotte, 2023). In most specimens, the white pubescence manifests as a narrow dashed rectangle or displays a more or less irregular design on the elytral sides, just beyond the midpoint. Nevertheless, it is noteworthy that in some instances, the white pubescence may only form a narrow dashed band laterally (see Fig. 5B).

Material examined: BRAZIL, *São Paulo* (**new state record**): Valentim Gentil (20°22'17.78"S, 50°04'48.42"W), [pheromone trap], 1 female (MZSP 61248), 08.XII.2016, W.D. Silva leg. (MZSP).

DISCUSSION

Our proposal to transfer *Piezosecus* from Piezocerini to Hesperophanini is strongly supported by a convergence of morphological and taxonomic evidence. Notably, *Piezosecus* exhibits open mesocoxal cavities, a characteristic that aligns with the variability observed within Hesperophanini and contrasts with the consistently closed cavities in Piezocerini. Additionally, the genus possesses open lateral procoxal cavities, a typical feature of Hesperophanini.

The antennal morphology of *Piezosecus* further solidifies this proposed transfer. It lacks the pronounced, keeled carinae on the basal flagellomeres that are diagnostic of Piezocerini. Furthermore, the shape and width of the prosternal and mesoventral processes in *Piezosecus* more closely resemble those found in Hesperophanini. Comparative definitions of Hesperophanini across various authors consistently indicate that the genus comfortably fits within the broader and more inclusive characteristics of this tribe, particularly regarding antennal and coxal features.

The alignment of *Piezosecus* with subtribal features of Hesperophanini (Daramina), as defined by Sama (2008), especially in the length and shape of the maxillary palpomeres, provides support for its transfer to Hesperophanini. However, these features alone are not sufficient to definitively place *Piezosecus* within Hesperophanini (Daramina), although they do reinforce its potential inclusion in the tribe. This is because of other features, such as the mesocoxal cavities that are not widely open to the epimeron, are inconsistent with Hesperophanini (Daramina). Therefore, the collective morphological evidence robustly supports the reclassification of *Piezosecus* into Hesperophanini *sensu* Martins & Galileo (1999), currently considered Hesperophanini (Hesperophanina), resolving previous taxonomic ambiguities.

In this study, we also document the first occurrences of *E. pickeli*, *P. triangularis*, and *O. bituberculata* in the Brazilian state of São Paulo. This represents the southeasternmost distributional record for both *P. triangularis* and *O. bituberculata* within Brazil. Notably, our record of *S. aguilari* in São Paulo constitutes a new country record for Brazil. It is also noteworthy that these species were collected using pheromone-baited traps, demonstrating the sensitivity of these tools in detecting these bee-

flies and further supporting their utility for geographic delineation of cerambycid species (Santos-Silva *et al.*, 2020).

Finally, our comparison between *S. aguilari* and *S. bellarmini* revealed substantial similarities in dorsal coloration. The absence of detailed distinguishing features (e.g., presence or absence of erect setae on the dorsal surface of metafemora) in the original description of *S. bellarmini* raises the possibility that these taxa may be conspecific. The discovery of *S. aguilari* in Brazil, the type locality of *S. bellarmini*, strengthens the argument for their synonymy. However, confirmation requires further investigation, including examination of the holotype of *S. bellarmini*.

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