Journal *of* Melittology
Bee Biology, Ecology, Evolution, & Systematics *The latest buzz in bee biology*
No. 107, pp. 1–24 4 December 2021

Two new genera of South American Eulonchopriini (Hymenoptera: Colletidae)

Michael S. Engel[1,2]

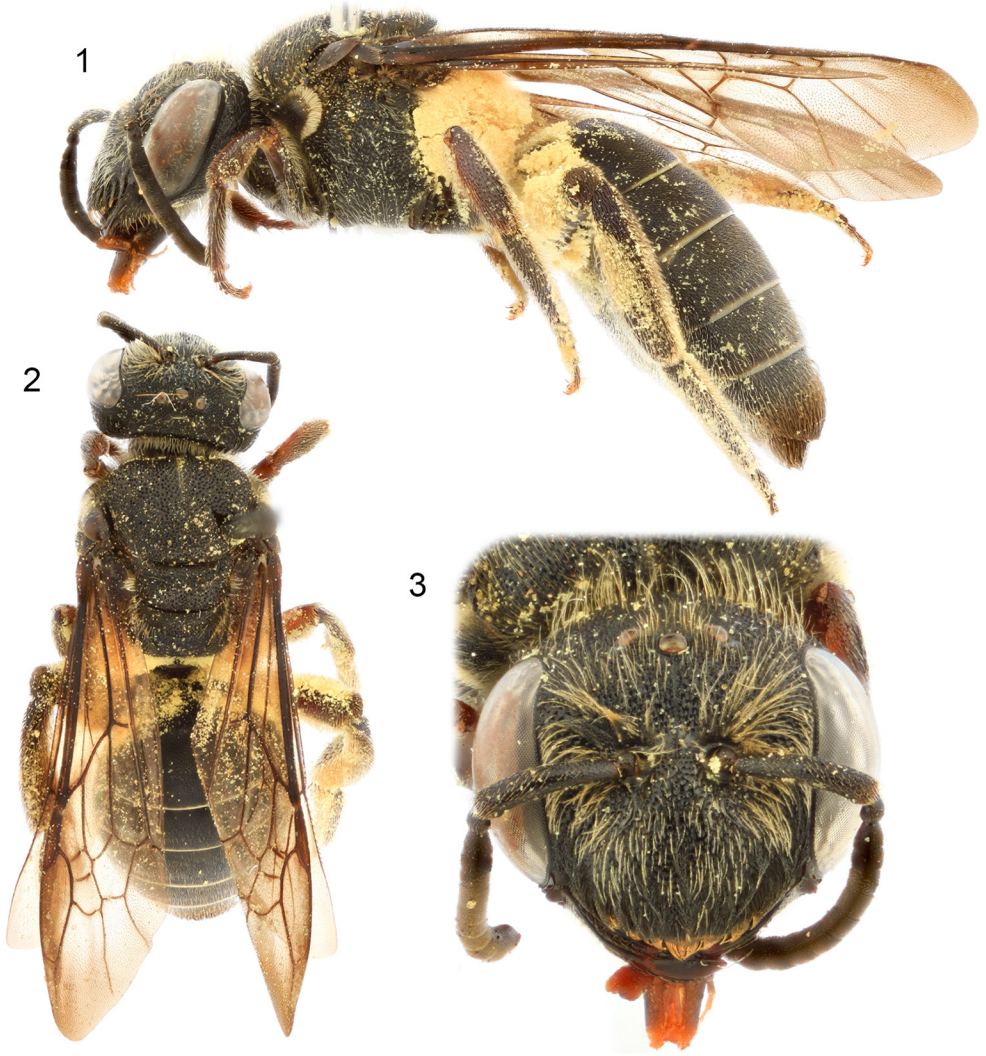
Abstract. Two new genera are described and figured for South American eulonchopriine bees. ***Apatosigynes*** Engel, new genus, is described for the eastern and southern Brazilian ***Apatosigynes meloi*** Engel, new species, and the northern Peruvian *Leioproctus* (*Nomiocolletes*) *simplicicrus* Michener (previously placed in *Eulonchopria* Brèthes). The genus is differentiated from *Eulonchopria* most notably by the absence of a preoccipital carina or lamella, absence of a pronotal carina, simple axillae, a rugose propodeum, and narrow metasomal bands. Similarly, ***Mimozibyne*** Engel, new genus, is described for the Argentine and Paraguayan *L.* (*Perditomorpha*) *eulonchopriodes* Michener. *Mimozibyne* is easily confused with *Perditomorpha* Ashmead or an enigmatic *Eulonchopria*, and is distinguished on the basis of two submarginal cells (as in *Perditomorpha*), coarse punctation, presence of yellow metasomal bands with raised margins, and more squat antennal flagellomeres. The following new combinations are established: *Apatosigynes simplicicrus* (Michener) and *Mimozibyne eulonchopriodes* (Michener).

INTRODUCTION

The classification of the South American fauna of the former subfamily Paracolletinae has been in a constant state of revision for many years now (Michener, 1989; Almeida *et al*., 2012). The group has been divided up such that the Australian fauna has been organized into a series of rather well-delimited tribes [Trichocolletini, Callomelittini, Paracolletini (although best removed to its own subfamily sister to Diphaglossinae), Anthoglossini, and Neopasiphaeini] and recognized as a clade (Almeida *et al*., 2012), with the exception of *Paracolletes* Smith, while the New World fauna continues to be reorganized with at least several genera removed to tribes Lonchopriini

[1] Division of Entomology, Natural History Museum, and Department of Ecology & Evolutionary Biology, 1501 Crestline Drive – Suite 140, University of Kansas, Lawrence, Kansas 66045-4415, USA (msengel@ku.edu).
[2] Division of Invertebrate Zoölogy, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024-5192, USA.
doi: https://doi.org/10.17161/jom.i107.16038

ISSN 2325-4467



Figures 1–3. Holotype female of *Apatosigynes meloi*, new genus and species. **1.** Lateral habitus. **2.** Dorsal habitus. **3.** Facial view.

and Reedapini (Engel, 2020a, 2020b) [the table in Engel *et al*. (2021) summarizes some of these changes as does that in Engel & Gonzalez (in prep.)]. What remains is in need of revision, although excellent strides have been made in recent years (*e.g*., Almeida & Quinteiro, 2015; Almeida & Gibran, 2017).

Here I address two enigmatic species that have been difficult to place, both bearing enamel-like bands apically on the metasomal terga, albeit rather narrow and easily overlooked in one of these. The first, *Leioproctus simplicicrus* Michener, was described and placed in *Nomiocolletes* Brèthes, which at the time was considered a subgenus of a retrograde classification of paracolletine bees (Michener, 1989). Eventually, based on astute observations by G.A.R. Melo and shared with Michener (2007), the affinities of the species with *Eulonchopria* Brèthes were recognized. While this association certainly represented a significant improvement over any prior assignment, the species

Figures 4–5. Holotype female of *Apatosigynes meloi*, new genus and species. **4.** Dorsal oblique view of vertex. **5.** Head in profile.

nonetheless lacks diagnostic features of *Eulonchopria*, rendering the concept of this genus unclear. The second species, *L. eulonchopriodes* Michener was placed in *Perditomorpha* Ashmead, and similarly a part of a retrograde *Leioproctus* Smith. This species is likewise misplaced in its association with *Perditomorpha*, and, as the specific epithet suggests, shares many features superficially with *Eulonchopria*. These species, as well as a third that until now was undescribed (Fig. 1), are assigned to two new genera herein. The descriptions loosely follow the format employed by Michener (1989), while the morphological terminology follows Engel (2001) and Michener (2007). Material is in the Division of Entomology (Snow Entomological Collections), University of Kansas Natural History Museum (Biodiversity Institute), Lawrence, Kansas, USA (SEMC).

SYSTEMATICS

Tribe Eulonchopriini Moure

As noted in the introductory comments, the inclusion of *E. simplicicrus* within *Eulonchopria* renders the circumscription of the genus problematic and obviates most of the traits that serve to distinguish the genus. Accordingly, as *E. simplicicrus* is related to but clearly outside of *Eulonchopria s.l.*, removing the former to its own genus retains the integrity of *Eulonchopria* as it has historically been understood, and emphasizes the unique combination of features embodied by *E. simplicicrus* and the new species described herein. Given that *E. simplicicrus* remains known only from the male holo-

Figures 6–8. Holotype female of *Apatosigynes meloi*, new genus and species. **6.** Mesosomal dorsum. **7.** Detail of axilla. **8.** Basal area of propodeum.

type, while the new species is known from both sexes, I've selected the latter to serve as type species.

Apatosigynes Engel, new genus

ZooBank: urn:lsid:zoobank.org:act:B6EA975D-CFBE-415E-974D-60680237A9FE

TYPE SPECIES: *Apatosigynes meloi* Engel, new species.

DIAGNOSIS: The new genus is similar to *Eulonchopria* in the coarsely punctured, nonmetallic integument, as well as the presence of enamel-like bands apically on terga I–IV, albeit they are exceptionally narrow in *Apatosigynes*. Unlike *Eulonchopria*, the new genus has the inner orbits of the compound eyes roughly parallel (Fig. 3) (converging in *Eulonchopria*: Fig. 32), the preoccipital area rounded (Figs. 4, 5) (carinate to lamellate in

Figures 9–10. Holotype female of *Apatosigynes meloi*, new genus and species. **9.** Metabasitibial plate. **10.** Prepygidial fimbria and pygidial plate.

Eulonchopria: Figs. 30–32, 36, 37), the facial foveae absent (Fig. 3) (present in *Eulonchopria s.str.*), has a rounded pronotal dorsal ridge (Figs. 1, 6, 11) (carinate onto pronotal lobe in *Eulonchopria*: Figs. 33, 36); lacks an omaular carina (present in *Eulonchopria s.str.*), wings not plaited (plaited in *Eulonchopria*), the border of the pterostigma within the marginal cell convex (Figs. 17, 18) (concave to straight in *Eulonchopria*: Fig. 30), the longer body setae (Figs. 1, 2, 11, 12, 22, 23) (minute, plumose, and largely embedded within punctures in *Eulonchopria*: Figs. 30, 31, 33, 36), a rugose basal area to the propodeum (Fig. 8, 14, 16, 28) (areolate in *Eulonchopria*: Figs. 35, 46), metafemoral scopa composed of elongate branched setae (composed of short, apically branched setae in *Eulonchopria s.str.*), metabasitibial plate of female only carinate posteriorly (Fig. 9) (completely carinate in *Eulonchopria*: Fig. 39), enamel-like bands of terga I–IV exceptionally narrow and flat (Figs. 1, 2, 11, 12, 14, 22, 23, 25) (bands broader, more noticeable, and with apical margin slightly upcurved in *Eulonchopria*: Figs. 30, 31, 38, 41, 42, 46), and the pygidial plate of the female not continued basolaterally (Fig. 10) (continued basolaterally in *Eulonchopria*: Fig. 40).

Description: Moderate-sized bees, *ca*. 8–11 mm in length; integument nonmetallic, coarsely punctate and coarsely sculptured; pubescence short and typically fine, not minute, broadly plumose, and embedded within punctures as in *Eulonchopria s.str*.

Face convex, supraclypeal area more protuberant than clypeus; inner orbits of compound eyes roughly parallel (distinctly converging below in *Eulonchopria*); malar space linear; facial fovea absent (similar to *Ethalonchopria* Michener); vertex convex and elevated above upper ocular tangent in facial view; anterior margin of median ocellus above midpoint between antennal toruli and posterior margin of vertex; preoccipital ridge rounded (ecarinate and not lamellate); mandible of female and male with preapical tooth on upper margin; labrum much broader than long with apical margin convex; flagellomere I of male about as long as broad, flagellomere II about 1.3× as long as broad, middle flagellomeres over 1.5× as long as broad.

Pronotum dorsolaterally rounded, without carina or lamella extending onto pronotal lobe (carina present in *Eulonchopria*); omaular carina absent; metepisternal area moderately impressed; axillae simple (angulate in *Eulonchopria s.str.*). Basal area of

Figures 11–13. Paratype male of *Apatosigynes meloi*, new genus and species. **11.** Lateral habitus. **12.** Dorsal habitus. **13.** Facial view.

propodeum matte with raised rugae, without deep areolae, otherwise finely imbricate between rugae (deep areolae present in *Eulonchopria*), subequal to metanotum; lateral surface of propodeum with abundant scopal setae.

Probasitarsus of female with comb on outer edge extending length of probasitarsus, without outer apical process (process present in *Eulonchopria*) from which comb extends apically; metafemoral scopa of female composed of elongate, curved setae with minute branches along their entire rachis (short curved setae in *Eulonchopria*), such setae wrapping ventrally to enclose a defined fiscina (*sensu* Engel, 2001; Engel *et al*., 2021) over glabrous ventral surface of metafemur; metatibia with setae of outer

Figures 14–16. Paratype male of *Apatosigynes meloi*, new genus and species. **14.** Dorsal view of mesoscutellum through propodeum and metasoma. **15.** Metabasitibial plate. **16.** Basal area of propodeum and metasomal tergum I.

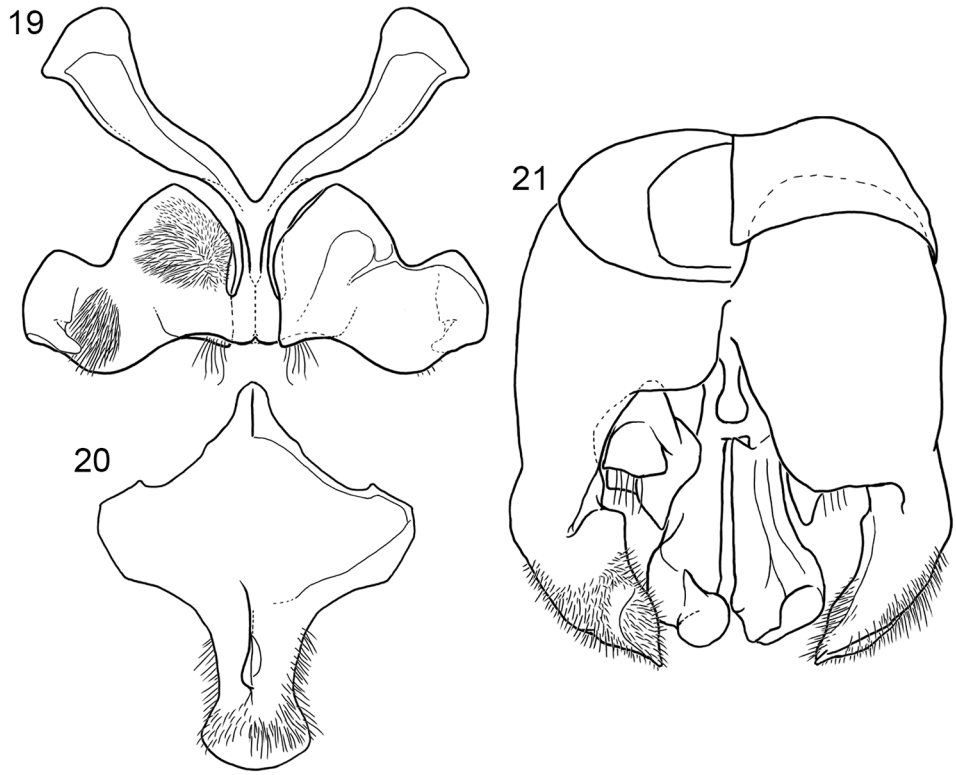
surface of moderate length, branched although becoming simpler apically, especially on apical half of metatibia, setae of inner surface of moderate length, apically branched and forming a distinct, uniform field (but without keitrotrichiate field); metabasitibial plate of female only indicate by posterior carina (well defined and acutely rounded apically, about one third as long as metatibia in *Eulonchopria*); metabasitibial plate of male well defined, carina delimited on all sides, acutely pointed apically, carina extending to apex of metatibia; inner metatibial spur of female coarsely pectinate (3–4 branches), of male ciliate (coarsely pectinate or ciliate in South American *Eulonchopria*,

Figures 17–18. Wing venation of male of species of *Apatosigynes*, new genus. **17.** Forewing and hind wing of *Apatosigynes simplicicrus* (Michener), new combination. **18.** Forewing of *A. meloi*, new species.

or absent in North American *Eulonchopria s.str.*); metabasitarsus of female elongate, tapering apically, apex more than half as wide as maximum proximal width, outer surface flat, setae subequal to those of inner surface, similar to those of apical outer surface of metatibia, not obscuring surface.

Forewing not plaited (commonly plaited longitudinally, as in Vespidae, in *Eulonchopria*); 1M (basal vein) distad 1cu-a; pterostigma nearly parallel sided, r-rs arising just apicad midlength (near apex in *Eulonchopria*), margin within marginal cell convex; apex of marginal cell obliquely truncate; three submarginal cells.

Metasoma without setal bands, terga I–IV of female and terga I–V of male with exceptionally narrow marginal integumental pale yellow bands, those of male broader than bands of female; prepygidial fimbria of female strongest medially, fading away laterally; pygidial plate of female with margin not continued basolaterally (continued nearly to lateral margin of tergum VI in *Eulonchopria*); pygidial plate of male absent,



Figures 19–21. Male terminalia of *Apatosigynes meloi*, new genus and species; left halves are ventral views, right halves dorsal views. **19.** Metasomal sternum VII. **20.** Sternum VIII. **21.** Genital capsule.

surface of tergum VII coarsely and closely punctate like preceding terga; metasomal sterna densely punctate, those of female with field of abundant minute, translucent white setae, of male without such translucent setae. Metasomal sternum V of male with apical margin broadly concave and dense fringe of long, yellow setae; sternum VI of male with broad, shallow medial concavity in apical margin; sternum VII of male narrow medially, with two primary pairs of broad lobes distally, lobes with setae on ventral surfaces; sternum VIII of male rather large and broad, with broad basal spiculum with concave margins arching to sternal body, and broad flat apical process, with bluntly rounded apex (not beveled like a pygidial plate), process gently downcurved. Gonostylus broad, with abundant setae, gently arching ventroapically from apex of gonocoxa; volsella large, with broadly triangular medioapical process, without distinct denticles but with long medioapical setae; penis valve strongly downcurved apically (not strongly downcurved in *Eulonchopria*), with inner margin simple (with preapical lobes or processes on inner margin in *Eulonchopria*).

Etymology: The new genus-group name is a combination of the Greek words *apátē* (ἀπάτη, meaning, "fraud") and *sigynê* (σίγυνη or σίγυνος, meaning, "spear"). The gender of the name is masculine.

Included species: The genus currently includes the type species (described below from Brazil, *vide infra*), and *Apatosigynes simplicicrus* (Michener), new combination, from Peru (holotype ♂, *visum* SEMC, Loreto Province, Pucallpa, 200 m, 20–30 June

1965, J. Schunke). The two species occupy somewhat different climatic regions and appear to live in different habitats, the type species found in the tropical wet-dry climate of southeastern Brazil, and *A. simplicicrus* occurring in the tropical wet monsoon climate of northern Amazonian Peru.

REMARKS: Recognition of *Apatosigynes* leaves *Eulonchopria* circumbscribed by those features outlined by Michener (1989, 2007), many of which are distinctive apomorphies (*e.g.*, the body setation, carinate and lamellate carinae on preoccipital ridge, pronotsal dorsal ridge, angulate axillae, broad enamel-like bands with upcurved margins, *&c.*). What remains to be discovered is whether *Ethalonchopria* should remain in *Eulonchopria*. Certainly for the moment, it seems best placed therein and appears to share more derived features with *Eulonchopria s.str.*, particularly in features that generally characterize the genus in such a broad sense.

Key to species of *Apatosigynes*
(males only, female of *A. simplicicrus* unknown)

1. Dorsal surface of metasomal tergum I elongate, 0.55× as long as broad; rugae of basal area of propodeum prominent (Figs., 14, 16); legs largely dark reddish brown (Figs. 11, 12); tergum VII without mediolongitudinal strip of imbricate integument, instead uniformly punctured; sternum V with apical margin concave; sternum VII with lateral lobe about as wide as proximal lobe (Fig. 19); sternum VII with spiculum narrowing to rounded apex (Fig. 20), shape as in figure 20; larger species, *ca.* 9.4 in length, forewing *ca.* 7.6 mm [Brazil (Bahia, Espirito Santo, Minas Gerais, Santa Catarina, São Paulo)] ..... *A. meloi*, n. sp.
—. Dorsal surface of metasomal tergum I shorter, 0.47× as long as broad; rugae of basal area of propodeum weak (Fig. 28); legs wholly testaceous (Figs. 22, 23); tergum VII with thin mediolongitudinal strip of impunctate and imbricate integument contrasting with punctures of remainder of tergum; sternum V with apical margin relatively straight; sternum V with apical margin concave; sternum VII with lateral lobe broader than proximal lobe (Michener, 1989: fig. 18); sternum VII with spiculum blunt (Michener, 1989: fig. 18), shape as in figure 18 of Michener (1989); smaller species, *ca.* 8 mm in length, forewing *ca.* 6.8 mm [Peru (Loreto)] ..... *A. simplicicrus* (Michener)

Apatosigynes meloi Engel, new species
ZooBank: urn:lsid:zoobank.org:act:386A6A6C-986C-44DF-8D66-FBEE007CCC93
(Figs. 1–21)

DIAGNOSIS: This species is quite similar to *A. simplicicrus* from Amazonian Peru and was previously identified as conspecific. However, the Brazilian species differs by the more elongate first metasomal tergum, the largely dark reddish legs, the more prominently rugose basal area to the propodeum, the absence of a mediolongitudinal strip of impunctate and imbricate integument on tergum VII of the male, and sternum V with a concave apical margin. There are also differences in the hidden sterna and genitalia (Figs. 19–21, *cf.* fig. 18 in Michener, 1989), particularly in the forms and setation of sterna VII and VIII.

DESCRIPTION: As for genus with following additions: ♀: Total body length 10.9 mm; forewing length 8.1 mm. Head broader than long, width 3.1 mm, length 2.5 mm; upper interocular distance 1.9 mm, lower interocular distance 1.9 mm; gena narrower

Figures 22–24. Holotype male of *Apatosigynes simplicicrus* (Michener), new combination. **22.** Dorsal habitus. **23.** Lateral habitus. **24.** Facial view.

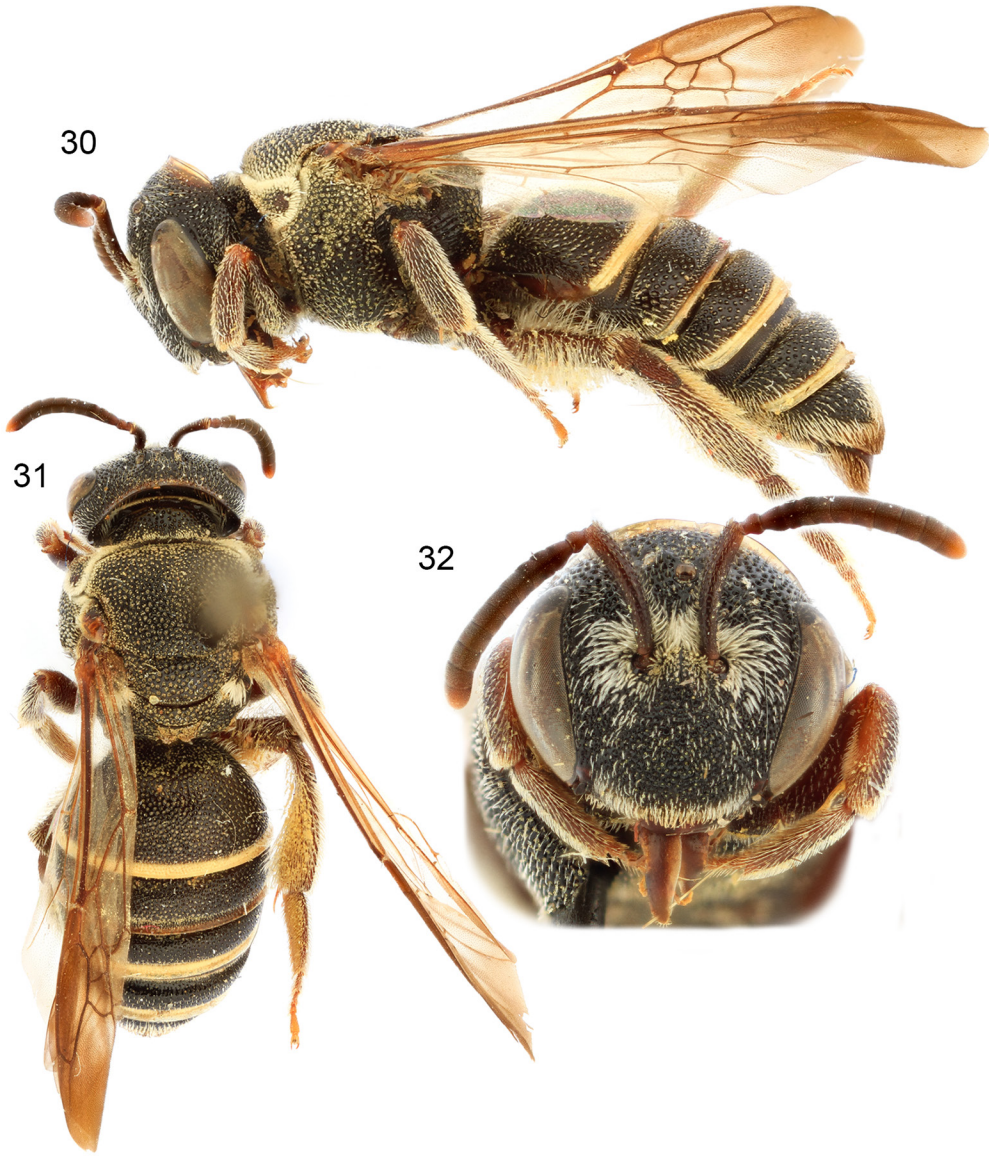
than compound eye in profile. Scape long, reaching above level of median ocellus. Intertegular distance 2.2 mm.

Integument largely coarsely and contiguously punctured, with faintly imbricate integument between punctures, where evident; punctures more spaced on mesoscutum and mesoscutellum, separated by less than a puncture width but with definable integument between rather than contiguous, integument finely imbricate; pleura contiguously and coarsely punctured, punctures slightly more separated ventrally and posteriorly; metepisternum without coarse punctures, instead imbricate with fine striae dorsally; basal area of propodeum with raised rugae projecting from base to apical

Figures 25–29. Holotype male of *Apatosigynes simplicicrus* (Michener), new combination. **25.** Dorsal view of metasoma. **26.** Retrolateral view of metatibia (note lengthwise dorsal carina). **27.** Metabasitibial plate. **28.** Basal area of propodeum. **29.** Metasomal tergum I.

margin, integument finely imbricate between rugae. Metasomal terga densely punctate, punctures nearly contiguous, those anteriorly on dorsal-facing surface of tergum I slightly larger, anterior-facing surface almost impunctate, otherwise finely imbricate; enamel-like bands impunctate; sterna with dense setigerous punctures.

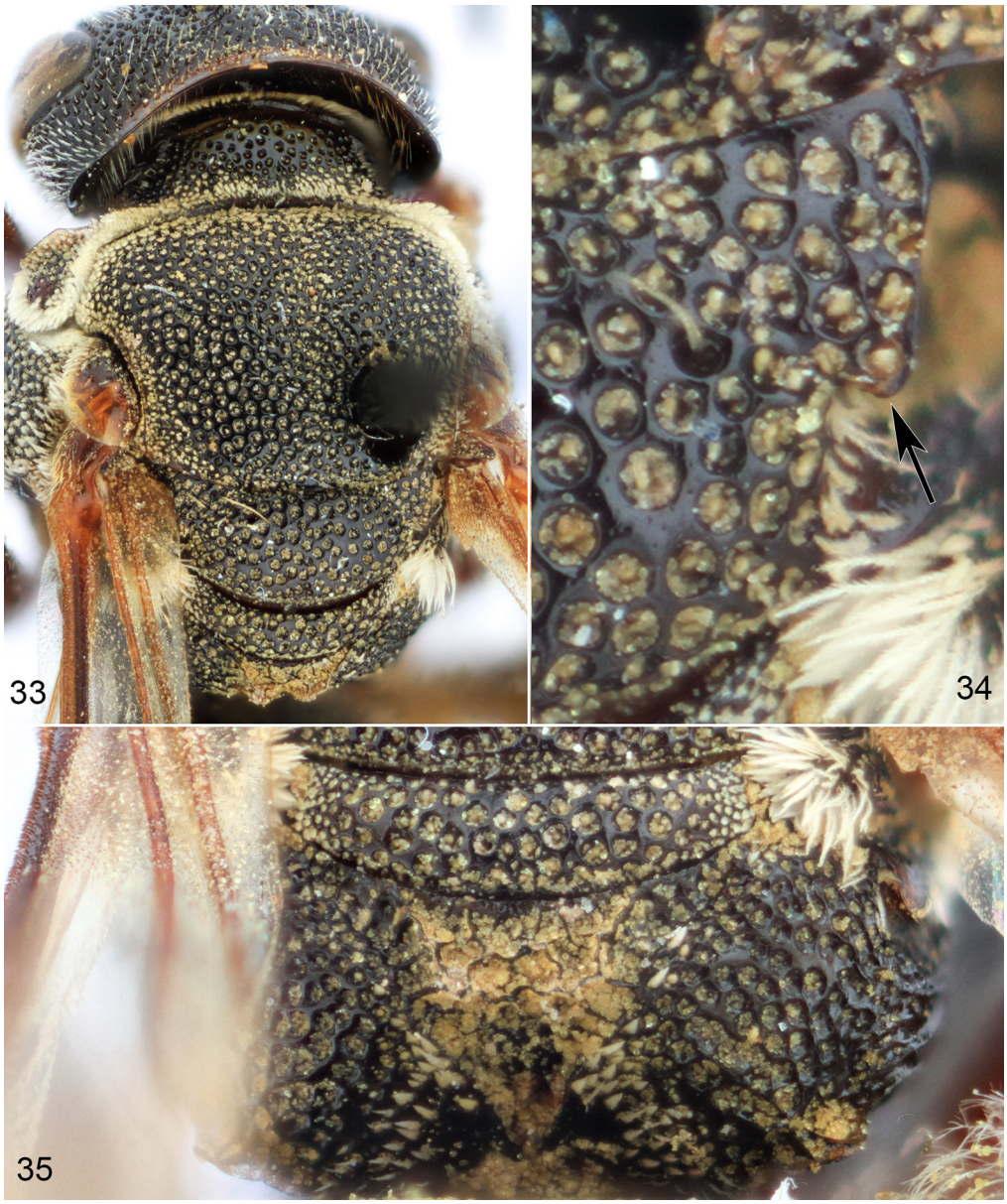
Integument black except on legs beyond trochanters dark reddish brown, somewhat lighter on tarsi, and exceptionally narrow enamel-like pale yellow bands on apical margins of terga I–IV, bands shorter than 0.5× median ocellar diameter. Wing



Figures 30–32. Paratype female of *Eulonchopria* (*Eulonchopria*) *punctatissima* Michener. **30.** Lateral habitus. **31.** Dorsal habitus. **32.** Facial view.

membranes lightly infumate except clear centrally from apex of radial cell to just beyond second medial cell; veins dark brown to black.

Pubescence generally diffuse and yellowish to fuscous; setae of face largely yellowish, and long to moderate length, with short branches, setae most numerous on clypeus and around and above antennal toruli but not obscuring integument, setae of vertex more erect. Mesoscutum with scattered erect fine setae, such setae simple or with a few minute apical branches, except anteriorly setae with more abundant branches along rachis; similar setae on mesoscutellum and metanotum except shorter on latter; setae of pleura erect, long to moderate length, and minutely branched along rachis, such setae on metepisternum finer, thinner, and shorter; scopal setae on pro-



Figures 33–35. Paratype female of *Eulonchopria* (*Eulonchopria*) *punctatissima* Michener. **33.** Dorsal view of head and mesosoma. **34.** Detail of axilla (arrow indicates projected angle). **35.** Basal area of propodeum.

podeum laterally; basal area of propodeum glabrous. Pubescence of legs as in generic account (*vide supra*). Metasoma with short decumbent simple setae, sparser on basal terga, progressively more abundant on apical terga and intermixed with sparse, slightly longer, erect, simple setae; prepygidial fimbria composed of dense, fuscous setae, setae minutely branched, similar setae surrounding pygidial plate; sterna with abundant, minute, blunt, translucent setae.

Figures 36–37. Head of paratype female of *Eulonchopria* (*Eulonchopria*) *punctatissima* Michener (arrows indicate lamellate preoccipital ridge). **36.** Oblique dorsal view of vertex. **37.** Head in profile.

♂: As for female except in usual sexual differences and as follows: Total body length 9.4 mm; forewing length 7.6 mm. Head broader than long, width 2.7 mm, length 2.1 mm; upper interocular distance 1.7 mm, lower interocular distance 1.5 mm. Scape short, not extending to level of median ocellus. Intertegular distance 2.0 mm.

Narrow enamel-like pale yellow bands on apical margins of terga I–V, bands slightly shorter than to subequal to median ocellar diameter.

Metasomal tergum VI with dense, long, fuscous setae apically, similar setae throughout disc of tergum VII; sterna with abundant, fine, moderate-length, yellowish, simple setae; those setae apically on sterna III–V progressively longer, with those of sternum V forming dense apical fringe along concave apical margin.

Holotype: ♀, Brazil, São Paulo, Ribeirão Preto, Campus da USP, 30.I.2000 [30 January 2000], Melo (SEMC).

Paratype: ♂, Brazil, São Paulo, Ribeirão Preto, Campus da USP, 30.I.2000 [30 January 2000], Melo (SEMC).

Etymology: The specific epithet honors Gabriel A.R. Melo, distinguished Brazilian hymenopterist who collected and donated the material (to Michener and the SEMC in 2000), and in recognition of his many contributions to the systematics of living and fossil Aculeata. Gabriel and I were graduate students during the same years, he in SEMC while I was at Cornell. I recall fondly my regular visits to see Michener, at which time I also had the pleasure to interact and discuss systematics with and generally be illuminated by Gabriel.

Figures 38–40. Paratype female of *Eulonchopria* (*Eulonchopria*) *punctatissima* Michener. **38.** Dorsal view of metasoma. **39.** Metabasitibial plate. **40.** Metasomal apex, particularly pygidial plate (note basolateral continuation of plate).

Mimozibyne Engel, new genus

ZooBank: urn:lsid:zoobank.org:act:6B16C2CA-D233-4731-A666-174DD32AFCAF

TYPE SPECIES: *Leioproctus* (*Perditomorpha*) *eulonchopriodes* Michener, 1989.

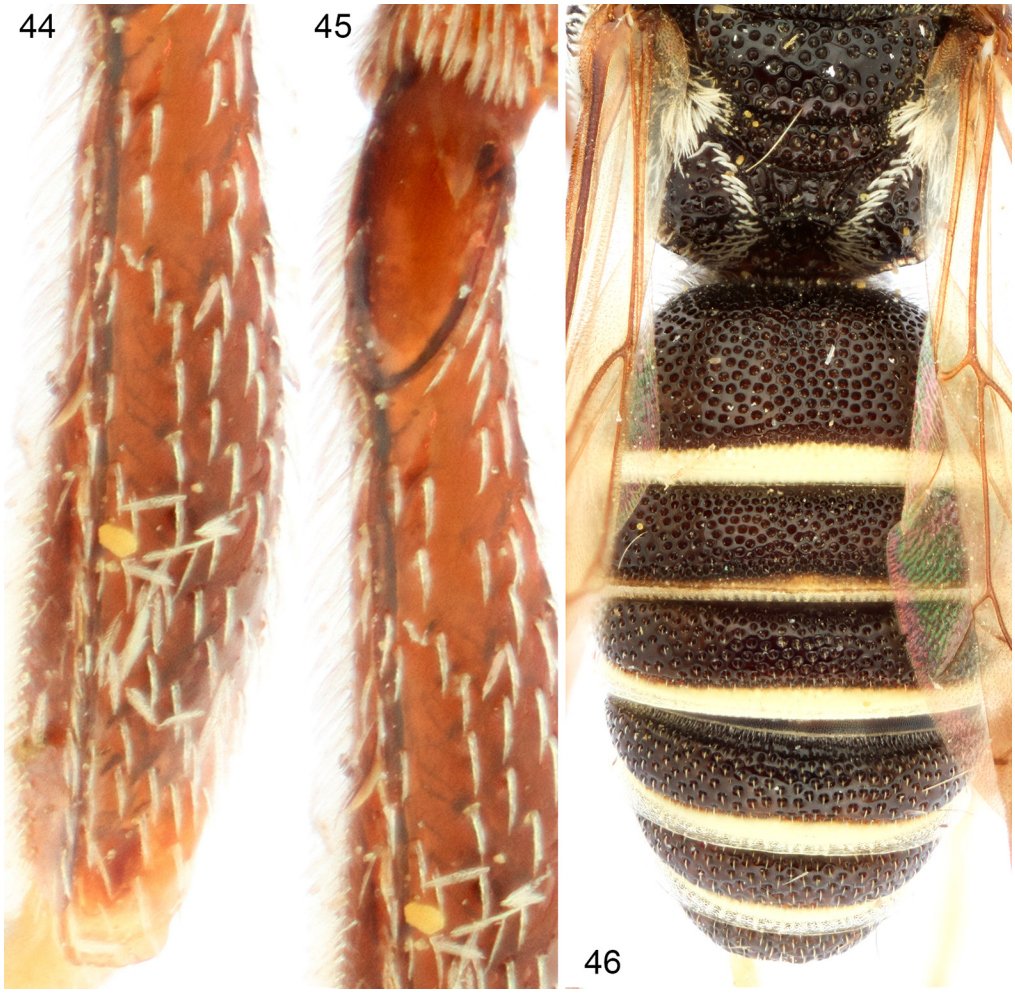
DIAGNOSIS: The new genus is similar to *Perditomorpha* (*sensu* Moure *et al*., 1999, but also including most species of *Bicolletes* Friese in their sense), but can be distinguished most readily by the presence of broad yellow bands on metasomal terga I–V (Figs. 49, 51), with apical margins raised and carinate (Fig. 49), and the densely and coarsely punctate integument (Figs. 47–51, 53) (moderately to finely punctate in *Perditomorpha*). In addition, the middle flagellomeres are broader than long (Figs. 50, 53), rather than longer than broad as in *Perditomorpha*.

DESCRIPTION: Moderate-sized bees, approximately 7 mm in length; integument nonmetallic, coarsely punctate and coarsely sculptured (moderately to finely punctate in *Perditomorpha*); pubescence short to moderate length and typically minutely branched; metasoma without setal bands.

Face weakly convex, supraclypeal area not more protuberant than clypeus; inner orbits of compound eyes converging below; malar space linear; facial fovea absent;

Figures 41–43. Paratype male of *Eulonchopria* (*Eulonchopria*) *punctatissima* Michener. **41.** Lateral habitus. **42.** Dorsal habitus. **43.** Facial view.

vertex convex, not elevated far above upper ocular tangent in facial view; preoccipital ridge rounded; mandible of male with preapical tooth on upper margin; labrum much broader than long with apical margin broadly concave; antenna of male reaching to tegula, flagellomere I slightly longer than broad, longer than flagellomere II, flagellomeres II and III each distinctly broader than long and each much shorter than remaining flagellomeres; middle flagellomeres slightly broader than long (longer than broad in *Perditomorpha*).



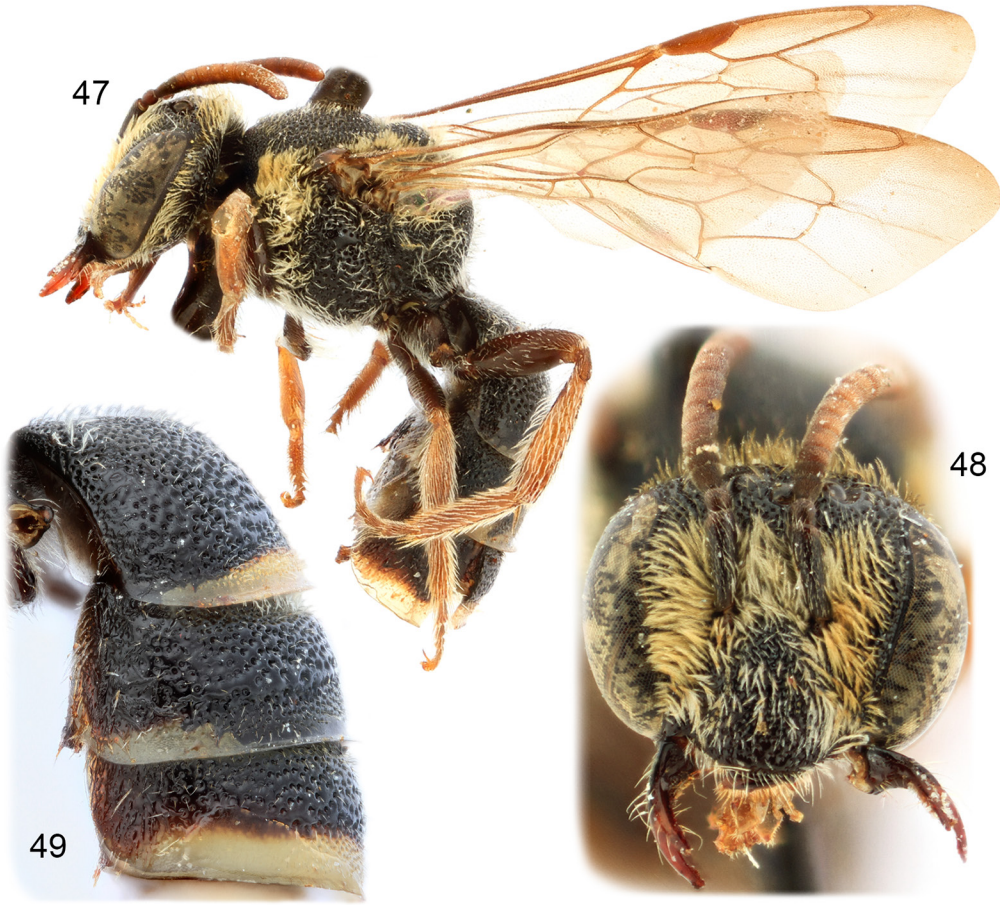
Figures 44–46. Paratype male of *Eulonchopria* (*Eulonchopria*) *punctatissima* Michener. **44.** Dorsal ridge of metatibia showing carina extending length. **45.** Metabasitibial plate and dorsal metatibial carina. **46.** Dorsal view of mesosomal apex and metasoma.

Pronotum without defined posterior dorsal ridge, without carina extending onto lobe; metepisternum deeply impressed, punctured as on remainder of pleura, almost asetose; basal area of propodeum smooth and glabrous, subhorizontal base of propodeum shorter than metanotum (typically longer than metanotum in *Perditomorpha*).

Inner metatibial spur of male ciliate; metabasitibial plate of male well defined, carinate on all sides, broadly rounded apically, without carina extending along length of metatibia.

Forewing not plaited; 1M slightly distad 1cu-a; pterostigma nearly parallel sided, r-rs arising just distad midlength, border within marginal cell convex; apex of marginal cell narrowly obliquely truncate; two submarginal cells.

Metasomal terga I–V with apical integumental pale yellow and yellow translucent bands in depressed marginal zones, without setal bands; sterna without defined apical setal bands except sternum V with distinct apical fringe (as in *Perditomorpha*); pygidial plate of male absent; sternum VII of male narrow medially, with two pairs of broad



Figures 47–49. Holotype male of *Mimozibyne eulonchopriodes* (Michener), new combination. **47.** Lateral habitus. **48.** Facial view. **49.** Basal metasomal segments in profile.

rounded lobes distally; sternum VIII of male large and broad, with broad basal spiculum, and apically with long (about as long as remainder of sternum), broad apical process, with rounded apex (not beveled like a pygidial plate), process slightly downcurved. Genital capsule with distinct broad gonostylus, gonostylus ventromesally partially membranous, with sparse scattered setae, those of membranous region longer; volsella small, with distinct denticles; penis valve simple, downcurved apically.

Etymology: The new genus-group name is a combination of the Greek words *mîmos* (μῖμος, meaning, "imitator") and *zibúnē* [ζιβύνη, meaning, "spear", alternative spelling of *sibynē* or *sibúnē* (σιβύνη)]. The gender of the name is feminine.

Included species: The genus currently includes only the type species, *Mimozibyne eulonchopriodes* (Michener), new combination, from northwestern Argentina (Salta) and Paraguay.

The following couplets, modified from Michener (2007: 138), are provided to incorporate the new genera into the most readily available key to the identification of these South American bees and their many relatives. Note that *Lonchorhyncha* Michener, *Lonchopria* Vachal, and *Lonchoprella* Michener included by Michener (2007) are

Figures 50–51. Holotype male of *Mimozibyne eulonchopriodes* (Michener), new combination. **50.** Dorsal view of mesosoma. **51.** Dorsal view of basal metasomal segments.

removed to Lonchopriini (Engel, 2020a), and *Reedapis* Michener and *Cephalocolletes* Michener are removed to Reedapini (Engel, 2020b). A summary of those changes is provided by Engel & Gonzalez (in prep.).

1. Metasomal terga I–IV of female and I–V or VI of male with enamel-like apical marginal zones of yellowish, green, bluish, or whitish, these zones usually at least partly impunctate and glabrous (Figs. 1, 2, 11, 12, 14, 16, 22, 23, 25, 29–31, 38, 40–42, 46, 49, 51, 54, 55, 59) 2
—. Metasomal terga without enamel-like apical marginal zones, with setae and punctures near apical margins that are concolorous with other parts of terga, or translucent or brownish 7
2(1). Punctation coarse and dense, with punctures contiguous or nearly so (Figs. 1, 2, 4, 6, 7, 11, 12, 14, 16, 25, 29–31, 33–38, 41–43, 46–51, 53); metatibial setae of female shorter than metatibial diameter [female of *Mimozibyne*, n. gen., unknown] 4
—. Punctation not so coarse, moderate to fine and not so dense, with large interspaces among punctures (Figs. 54, 55, 57); metatibial setae of female variable, but sometimes as long as or longer than metatibial diameter [Brazil] 3
3(2). Forewing with two submarginal cells; yellow metasomal bands setose; most metatibial setae of female shorter than metatibial diameter; metafemur and metatibia of male unmodified ..... *Baptonedys* Moure *et al*.
—. Forewing with three submarginal cells (Fig. 54); yellow metasomal bands glabrous (Figs. 54, 55, 59); many metatibial setae of female as long as or longer

Figures 52–53. Holotype male of *Mimozibyne eulonchopriodes* (Michener), new combination. **52.** Wing venation. **53.** Head and mesosoma in profile.

than metatibial diameter; metafemur of male crassate, metatibia of male swollen apically ..... *Nomiocolletes* Brèthes

4(2). Preoccipital carina strong, often lamella-like (Figs. 30–32, 36, 37, 41–43); pronotum dorsolaterally with strong transverse carina or lamella extending onto pronotal lobe (Fig. 33); pterostigma inside of marginal cell slightly concave to straight [Genus *Eulonchopria* Brèthes, *s.l.*] 5

—. Preoccipital and pronotal carinae (or lamellae) absent (Figs. 1, 2, 4, 5, 11, 12, 22,

Figures 54–56. Female of *Nomiocolletes arnaui* (Moure). **54.** Lateral habitus. **55.** Dorsal habitus. **56.** Facial view.

23); pterostigma inside of marginal cell convex (Figs. 17, 18) 6

5(4). Facial fovea absent; omaular carina absent (*i.e.*, anterior and lateral surfaces of mesepisternum not separated by carina); axilla simple (*e.g.*, Fig. 7); pterostigma inside of marginal cell slightly concave [Bolivia, Brazil (Santa Catarina)] .... *Ethalonchopria* Michener

—. Facial fovea distinct; omaular carina present (*i.e.*, anterior and lateral surfaces of mesepisternum separated by carina); axilla angulate (Fig. 34); pterostigma inside of marginal cell straight [Argentina to USA (Arizona)] .... *Eulonchopria* Brèthes, *s.str.*

6(4). Forewing with three submarginal cells (Figs. 17, 18); metasomal enamel-like bands narrower than median ocellar diameter (Figs. 1, 2, 10); basal area of pro-

Figures 57–59. Female of *Nomiocolletes arnaui* (Moure). **57.** Dorsal view of vertex, mesosoma, and metasomal tergum I. **58.** Metabasitibial plate. **59.** Metasomal apex, particularly pygidial plate.

podeum rugose (Figs. 8, 14, 16); metepisternum transversely striate; metabasitibial plate of male acutely pointed apically (Figs. 15, 27), with carina extending to metatibial apex (Fig. 26) [southeastern Brazil, Peru] .... *Apatosigynes*, n. gen.

—. Forewing with two submarginal cells (Fig. 47); metasomal enamel-like bands broader than median ocellar diameter (Figs. 49, 51); basal area of propodeum smooth; metepisternum punctate; metabasitibial plate of male broadly rounded apically (Fig. 47), without longitudinal carina extending along length of metatibia (Fig. 47) [Argentina (Salta), Paraguay] ..... *Mimozibyne*, n. gen.

7(1). Labial palpi unremarkable; pretarsal claws with inner rami shorter than outer rami and differently shaped, at least in female, or, rarely, pretarsal claws simple ..... Michener (2007) couplet 5

—. Labial palpi enormous, 8–9 mm long, in repose reaching metasomal sterna III or IV; pretarsal claws of both sexes deeply cleft, the two rami similar in shape and of almost equal length [Brazil] ..... *Niltonia* Moure

ACKNOWLEDGEMENTS

I am grateful to two anonymous reviewers for their helpful input. This is a contribution of the Division of Entomology, University of Kansas Natural History Museum.

REFERENCES

Almeida, E.A.B., & N.S. Gibran. 2017. Taxonomy of neopasiphaeine bees: Review of *Tetraglossula* Ogloblin, 1948 (Hymenoptera: Colletidae). *Zootaxa* 4303(4): 521–544.

Almeida, E.A.B., & F.B. Quinteiro. 2015. Two continents and two names for a Neotropical colletid bee species (Hymenoptera: Colletidae: Neopasiphaeinae): *Hoplocolletes ventralis* (Friese, 1924). *PeerJ* 3: e1338 [1–11].

Almeida, E.A.B., M.R. Pie, S.G. Brady, & B.N. Danforth. 2012. Biogeography and diversification of colletid bees (Hymenoptera: Colletidae): Emerging patterns from the southern end of the world. *Journal of Biogeography* 39(3): 526–544.

Engel, M.S. 2001. A monograph of the Baltic amber bees and evolution of the Apoidea (Hymenoptera). *Bulletin of the American Museum of Natural History* 259: 1–192.

Engel, M.S. 2020a. A second species of *Lonchoprella* from northern Argentina (Hymenoptera: Colletidae). *Entomologist's Monthly Magazine* 156(3): 155–162.

Engel, M.S. 2020b. Genera of the bee tribe Reedapini (Hymenoptera: Colletidae). *Journal of Melittology* 95: 1–16.

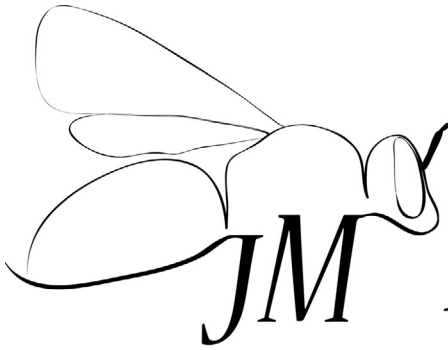
Engel, M.S., C. Rasmussen, & V.H. Gonzalez. 2021. Bees: Phylogeny and classification. In Starr, C.K. (Ed.), *Encyclopedia of Social Insects*: 93–109. Springer; Cham, Switzerland; xxvi+1049 pp.

Michener, C.D. 1989. Classification of American Colletinae (Hymenoptera, Apoidea). *University of Kansas Science Bulletin* 53(11): 622–703.

Michener, C.D. 2007. *The Bees of the World* [2nd Edition]. Johns Hopkins University Press; Baltimore, MD; xvi+[i]+953 pp., +20 pls.

Moure, J.S., V. Graf, & D. Urban. 1999. Catálogo de Apoidea da região Neotropical (Hymenoptera, Colletidae). I. Paracolletini. *Revista Brasileira de Zoologia* 16(Supl. 1): 1–46.

ZooBank: urn:lsid:zoobank.org:pub:5F570286-5939-4B3A-A290-9131360D55A8



Journal of Melittology

A Journal of Bee Biology, Ecology, Evolution, & Systematics

The *Journal of Melittology* is an international, open access journal that seeks to rapidly disseminate the results of research conducted on bees (Apoidea: Anthophila) in their broadest sense. Our mission is to promote the understanding and conservation of wild and managed bees and to facilitate communication and collaboration among researchers and the public worldwide. The *Journal* covers all aspects of bee research including but not limited to: anatomy, behavioral ecology, biodiversity, biogeography, chemical ecology, comparative morphology, conservation, cultural aspects, cytogenetics, ecology, ethnobiology, history, identification (keys), invasion ecology, management, melittopalynology, molecular ecology, neurobiology, occurrence data, paleontology, parasitism, phenology, phylogeny, physiology, pollination biology, sociobiology, systematics, and taxonomy.

The *Journal of Melittology* was established at the University of Kansas through the efforts of Michael S. Engel, Victor H. Gonzalez, Ismael A. Hinojosa-Díaz, and Charles D. Michener in 2013 and each article is published as its own number, with issues appearing online as soon as they are ready. Papers are composed using Microsoft Word® and Adobe InDesign® in Lawrence, Kansas, USA.

Journal of Melittology is registered in ZooBank (www.zoobank.org), and archived at the University of Kansas and in Portico (www.portico.org).

http://journals.ku.edu/melittology
ISSN 2325-4467