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Research article

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Tretogonia Melichar (Hemiptera: Cicadellidae: Proconiini): two new species from South Brazil and a redescription of *T. dentalis* Emmerich, 1988

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Abstract. Two new Brazilian sharpshooter species of the genus *Tretogonia* Melichar, 1926 are described and illustrated: *Tretogonia diminuta* sp. nov. and *T. elegantula* sp. nov., both from the State of Paraná. A redescription of *T. dentalis* Emmerich, 1988 is provided based on a male from the State of Mato Grosso do Sul. This is the first Brazilian record of *T. dentalis*, a species originally described from Paraguay. Photographs and line drawings are provided for the three species, as well as notes on the taxonomy and biology of the genus.

Keywords. Auchenorrhyncha, sharpshooter leafhoppers, taxonomy, morphology.

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Introduction

The subfamily Cicadellinae is composed of leafhoppers that feed on the xylem of vascular plants and includes some vectors of xylem-borne phytopathogenic bacteria; the copious amounts of watery excreta forcibly excreted by these insects during feeding has given rise to their common name of sharpshooters (Nielson & Knight 2000; Redak *et al.* 2004; Carvalho & Mejdalani 2006). Currently, the subfamily includes only two tribes (Young 1968), the cosmopolitan Cicadellini and the New World Proconiini.

The latter, which includes the genus treated herein, is especially diverse in the Neotropical region. The Proconiini can be distinguished from the Cicadellini by the following features (Young 1968): (1) antennal ledges protuberant in dorsal view, (2) hind legs at rest position not attaining the lateral lobes of the pronotum (exception: *Splonia* Signoret, 1891) and (3) male pygofer and subgenital plates with dispersed microsetae. The tribe currently comprises 60 genera and over 400 species. With adults usually varying in length from 10 to 22 mm (Evans 1947), the Proconiini are among the largest leafhoppers. Furthermore, their morphology shows quite peculiar and curious features, such as the elongate head process of *Raphirhinus* Laporte, 1832, the keeled pronotum of *Proconia* Peletier & Serville, 1825 and the greatly flattened and expanded anterior tibiae of *Peltocheirus* Walker, 1858 (see digital images of these remarkable genera in Wilson *et al.* 2009).

Tretogonia is a Neotropical genus distributed from Panama to Argentina (Young 1968; Wilson *et al.* 2009). It was erected by Melichar (1926), who designated *Tettigonia pruinosa* Walker, 1851 as the type species; in addition, he included *Tettigonia striata* Walker, 1851 in *Tretogonia* and described five new species: *T. callifera*, *T. conspicua*, *T. cribrata*, *T. notatifrons* and *T. punctatissima*. Subsequently, Oman (1949) transferred *T. striata* to *Cuerna* Melichar, 1925 and Metcalf (1965) renamed *T. pruinosa* as *T. walkeri* because the original name was preoccupied. However, Young (1968) synonymized *T. walkeri* with *T. notatifrons*. The latter author also transferred four previously described species to *Tretogonia* (*Amblydisca cinerea* Osborn, 1926, *Oncometopia tomentosa* Distant, 1908, *Tettigonia albicans* Walker, 1858 and *Tettigonia lateritia* Taschenberg, 1884) and described two new species (*Tretogonia bergi* and *T. costalimai*). Emmrich (1988) described an additional new species (*T. dentalis*). Currently, *Tretogonia* comprises 13 valid species (McKamey 2007). *Tretogonia albicans*, *T. conspicua* and *T. lateritia* are known only from female specimens (Young 1968).

Eight of the 13 previously known *Tretogonia* species have been recorded from Brazil (Cavichioli & Zanol 1991; Takiya *et al.* 2018). The biology of the known species of this genus is poorly known. However, Mejdalani & Emmrich (1998) reported the occurrence of specimens of *T. cribrata* on plants from freshwater habitats, such as *Eleocharis sellowiana* Kunth. and *Rhynchospora* sp. (both Cyperaceae) from a littoral sand dune marsh and *Typha dominguensis* Pers. (Typhaceae) from a dam located in an area of Atlantic Forest (about 1200 m a.s.l.). Light traps are the most effective method for collecting specimens of *Tretogonia*.

In the present study, we describe two new species of *Tretogonia* from South Brazil, *T. diminuta* sp. nov. and *T. elegantula* sp. nov., both collected in the State of Paraná. In addition, we provide a redescription of *T. dentalis* based on a male from the State of Mato Grosso do Sul. This is the first Brazilian record of *T. dentalis*, which was originally described from Paraguay (Emmrich 1988). For the three species, we present detailed descriptions, photographs, line drawings of the male terminalia and comparative notes.

Material and methods

The material examined here is deposited at the Coleção Entomológica Padre Jesus Santiago Moure, Departamento de Zoologia, Setor de Ciências Biológicas, Universidade Federal do Paraná, Curitiba, Brazil (DZUP) and the Departamento de Entomologia, Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil (MNRJ). Due to the tragic fire at the Museu Nacional, which occurred on the night of September 2nd, 2018, the new insect collection is temporarily housed in the Departamento de Vertebrados of that institution.

Techniques for preparation of male and female terminalia structures follow Oman (1949) with modifications by Cavichioli & Takiya (2012). For dissection of male and female terminalia, we follow Oman (1949) and Mejdalani (1998), respectively. Terminalia were analyzed and photographed in glycerin and subsequently stored in microvials attached to the corresponding specimen pin.

Descriptive terminology follows mainly Young (1968, 1977), except for the facial areas of the head (Hamilton 1981; Mejdalani 1993, 1998) and the female terminalia (Nielson 1965; Hill 1970). The use of the term gonoplac (= third ovipositor valvula) follows Mejdalani (1998).

Label data are quoted exactly with a virgule (/) separating lines on the labels and with explanatory notes in square brackets.

Results

Family Cicadellidae Latreille, 1825
Subfamily Cicadellinae Latreille, 1825
Tribe Proconiini Stål, 1869
Genus *Tretogonia* Melichar, 1926

Tretogonia Melichar, 1926: 273 (type species: *Tettigonia pruinosa* Walker, 1851, preoccupied (= *Tretogonia notatifrons* Melichar, 1926), by original designation).

Remarks

According to Young (1968), *Tretogonia* belongs to the group of genera in which the hind leg meron is exposed when the forewings are at rest position. It can be recognized by the following combination of characters (characters (1) and (4) are proposed here for the first time as taxonomically useful): (1) antennal ledge with distinct dorsal and ventral carinae, in frontal and lateral views, (2) pronotum and forewings conspicuously pitted, each pit with small seta, (3) posterior margin of pronotum rounded and extending to scutoscuteellar suture, (4) forewing brachial cell distinctly narrowed basally and (5) general coloration brown. In species of *Tretogonia*, the body is usually densely covered by brochosomes. The two new Brazilian species described here show the above-mentioned diagnostic features of *Tretogonia*. This genus is apparently monophyletic, as indicated by the morphological phylogenetic analysis of the Proconiini conducted by Mejdalani (2000). Synapomorphies of *Tretogonia* include the pronotum strongly produced posteriorly, the conspicuous pronotal and forewing pits, and the narrowed forewing brachial cell (Mejdalani 2000).

The following species are currently recognized in this genus (distribution based on Young 1968, Cavichioli & Zanol 1991, Freytag & Sharkey 2002, McKamey 2007, Wilson *et al.* 2009, Dellapé 2016 and Takiya *et al.* 2018; an asterisk indicates species known only from females):

T. albicans (Walker, 1858)*. Brazil.

T. bergi Young, 1968. Argentina, Brazil, Paraguay, Uruguay.

T. callifera Melichar, 1926. Bolivia, Brazil, French Guiana, Peru, Suriname.

T. cinerea (Osborn, 1926). Bolivia, Brazil.

T. conspersa Schmidt, 1928. Colombia, Guyana, Panama, Venezuela.

T. conspicua Melichar, 1926*. Ecuador.

T. costalimai Young, 1968. Brazil, Guyana, Venezuela.

T. cribrata Melichar, 1926. Argentina, Bolivia, Brazil, French Guiana, Peru.

T. dentalis Emmrich, 1988. Argentina, Brazil (new record), Paraguay.

T. diminuta sp. nov. Brazil.

T. elegantula sp. nov. Brazil.

T. lateritia (Taschenberg, 1884)*. Brazil.

T. notatifrons Melichar, 1926. Argentina, Bolivia, Brazil, Ecuador, French Guiana, Paraguay, Suriname.

T. punctatissima Melichar, 1926. Colombia, Ecuador, Peru, Venezuela.

T. tomentosa (Distant, 1908). Ecuador.

Tretogonia diminuta sp. nov.

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Figs 1–9

Diagnosis

Body short and robust (Figs 1–2) in comparison to other species of the genus; in dorsal view, head triangular (Fig. 1); pygofer with process serrated apically (Fig. 5); aedeagus with distinct dorsoapical lobe (Fig. 8).

Etymology

The specific epithet, ‘*diminuta*’, refers to the small body size, this being the smallest species of the genus.

Material examined

Holotype

BRAZIL • ♂; “S. [São] J. [José] [dos] PINHAIS PR [State of Paraná] / Brasil II-1982 / CAVICHIOLI Leg”; DZUP 215385.

Type locality

São José dos Pinhais, Paraná, South Brazil.

Measurement

Body length: holotype (♂) 8.2 mm.

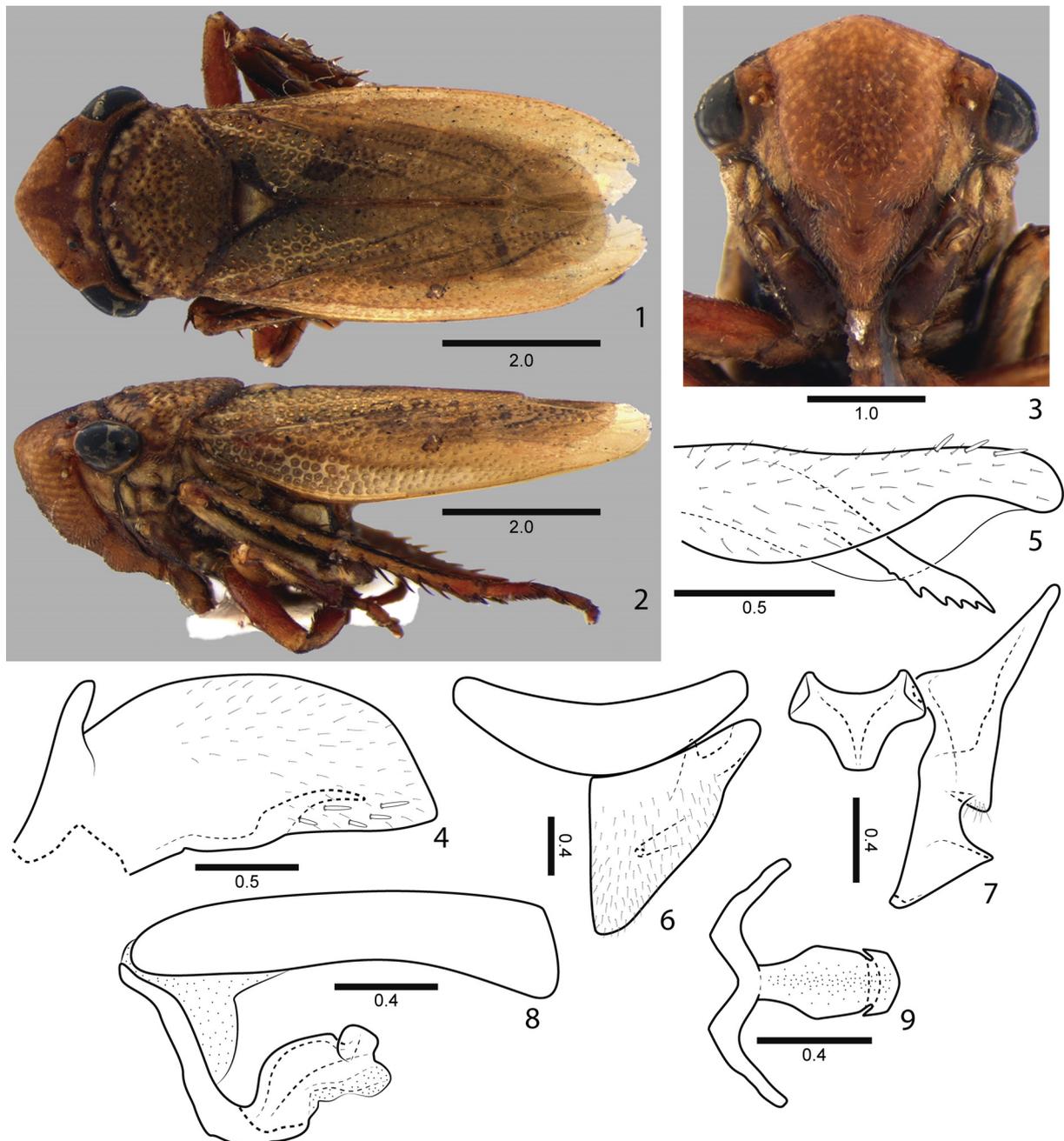
Description

Male

COLORATION. General coloration (Figs 1–3) brown. Frons and clypeus yellowish-brown; lorum darker and gena pale yellow. Pronotum with anterior and posterior margins dark brown. Scutellum pale yellow. Forewing with lighter area along costal margin from base to approximately level of apex of clavus; membrane area translucent. Foreleg mostly reddish-brown; middle and hind legs mostly pale brown with darker areas.

STRUCTURE. Head in dorsal view (Figs 1–3): well produced anteriorly, triangular, median length of crown slightly more than $\frac{1}{2}$ of interocular width and almost $\frac{3}{10}$ of transocular width; without carina at transition from crown to face; ocelli located slightly before imaginary line between anterior eye angles, each ocellus approximately equidistant between midline of crown and adjacent anterior eye angle; frontogenal suture extending onto crown and almost attaining ocellus; coronal suture distinct basally. Antennal ledge slightly protuberant; in lateral view (Fig. 2), distinctly bicarinate with surface between dorsal and ventral carinae depressed. Frons (Figs 2–3) convex with distinct muscle impressions; texture of central portion granular; epistomal suture obsolete medially; clypeus laterally with basal protuberance; apex rounded. Thorax (Figs 1–2) with pronotal width, between humeri, smaller than transocular width of head; pronotum elongate, attaining scutoscutellar suture; disk, except on anterior portion, with numerous large deep pits, without pubescence. Mesonotum with scutellum slightly transversely striate. Forewing (Figs 1–2) with texture of clavus and corium coriaceous and coarsely pitted; four apical cells, base of fourth more proximal than base of third. Hind wing with vein R2+3 incomplete. Hind leg with femoral setal formula 2+1+1 or 2+1; knee almost attaining posterior margin of lateral pronotal lobe; first tarsomere with many small setae on plantar surface.

TERMINALIA. Pygofer (Fig. 4) moderately produced posteriorly; broadly rounded distally; with few macrosetae and dispersed microsetae; ventral margin (Fig. 5) with process near half-length, curving inwards and serrated apically. Subgenital plate (Fig. 6) not fused to its counterpart; triangular; with numerous dispersed microsetae and few macrosetae near apex; dorsal surface with small tooth at apical third; plate not extending as far posteriorly as pygofer apex. Style (Fig. 7) elongate, almost attaining tooth of plate; apophysis with apical portion extremely expanded and forming pair of lateral teeth.



Figs 1–9. *Tretogonia diminuta* sp. nov., holotype, ♂ (DZUP 215385). 1. Body, dorsal view. 2. Body, lateral view. 3. Face, frontal view. 4. Pygofer, lateral view. 5. Pygofer, dorsal view. 6. Valve and subgenital plate, ventral view. 7. Connective and style, dorsal view. 8. Aedeagus and basal segment of anal tube, lateral view. 9. Aedeagus, ventral view. Scales in mm.

Connective (Fig. 7) Y-shaped; very short; stalk without median dorsal keel. Aedeagus symmetrical; shaft (Fig. 8) short; curved basally upwards and then strongly curved posteriorad; dorsal margin notched near apex; apical margin emarginated, forming dorsal lobe; in ventral view (Fig. 9), shaft expanded on distal half, constricted preapically and with pair of preapical short acute processes directed anteriorad.

Female

Unknown.

Remarks

Tretogonia diminuta sp. nov. can be distinguished from the other species of the genus by the combination of features provided in the diagnosis. The triangular head is useful for distinguishing *T. diminuta* sp. nov. from the three species of the genus that are only known from females (*T. albicans*, *T. conspicua* and *T. lateritia*). In Young's monograph, the new species keys to couplet six due to the absence of basal aedeagal processes (Young 1968). This couplet establishes the distinction between *T. cinerea* and three species positioned at couplets seven and eight (*T. punctatissima*, *T. costalimai* and *T. tomentosa*); in *T. cinerea* the aedeagus has a pair of minute processes located on the basal half of the shaft (Young 1968) instead of the preapical processes of *T. diminuta*, whereas in *T. punctatissima*, *T. costalimai* and *T. tomentosa* it has no processes (Young 1968).

Tretogonia elegantula sp. nov.

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Figs 10–25

Diagnosis

Dorsum brown with contrasting beige markings on posterior region of crown, anterior half of pronotum, scutellum and forewing (larger spot on basal portion of corium and smaller one at bases of outer and median anteapical cells) (Figs 10–11); style with apophysis forming large apical lobe (Fig. 16).

Etymology

The specific epithet, '*elegantula*', refers to the peculiar, distinctive beige markings of the new species (Figs 10–11).

Material examined

Holotype

BRAZIL • ♂; "Brasil, Paraná, Tibagi / P. [Parque] E. [Estadual] do Guartelá, 1000m / 24°33'47"S 50°15'26"W / 23–24.II.2017 Sweep / A.C. Domahovski leg."; DZUP 215386.

Paratypes

BRAZIL • 1 ♂; same data as for holotype; MNRJ • 1 ♂; "Brasil, Paraná, Parque / Estadual de Vila Velha / 25°14'S 45°59'W / 16.I.2004 G. Melo & / R. Gonçalves"; MNRJ • 1 ♀; "BRASIL, Paraná, Parque / Estadual de Vila Velha / 25°13'5,0"S 50°2'26,9"W / Malaise 1 23.X.2000 / PROVIVE"; DZUP 215387.

Type locality

Tibagi (Parque Estadual do Guartelá), Paraná, South Brazil.

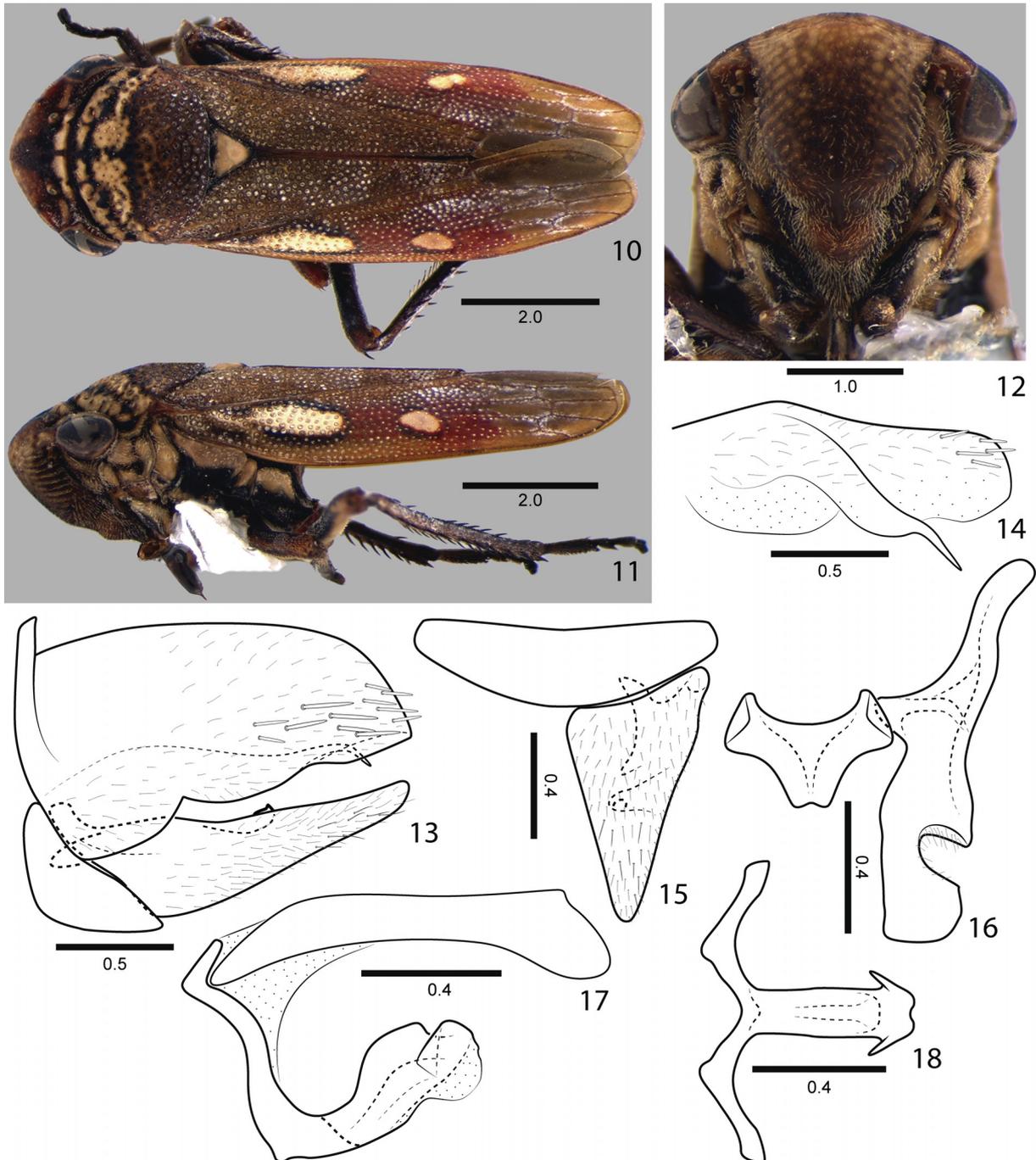
Measurements

Body length: holotype (♂) 9.6 mm; male paratypes 9.6–9.8 mm (n = 2); female paratype 10.0 mm.

Description

Male

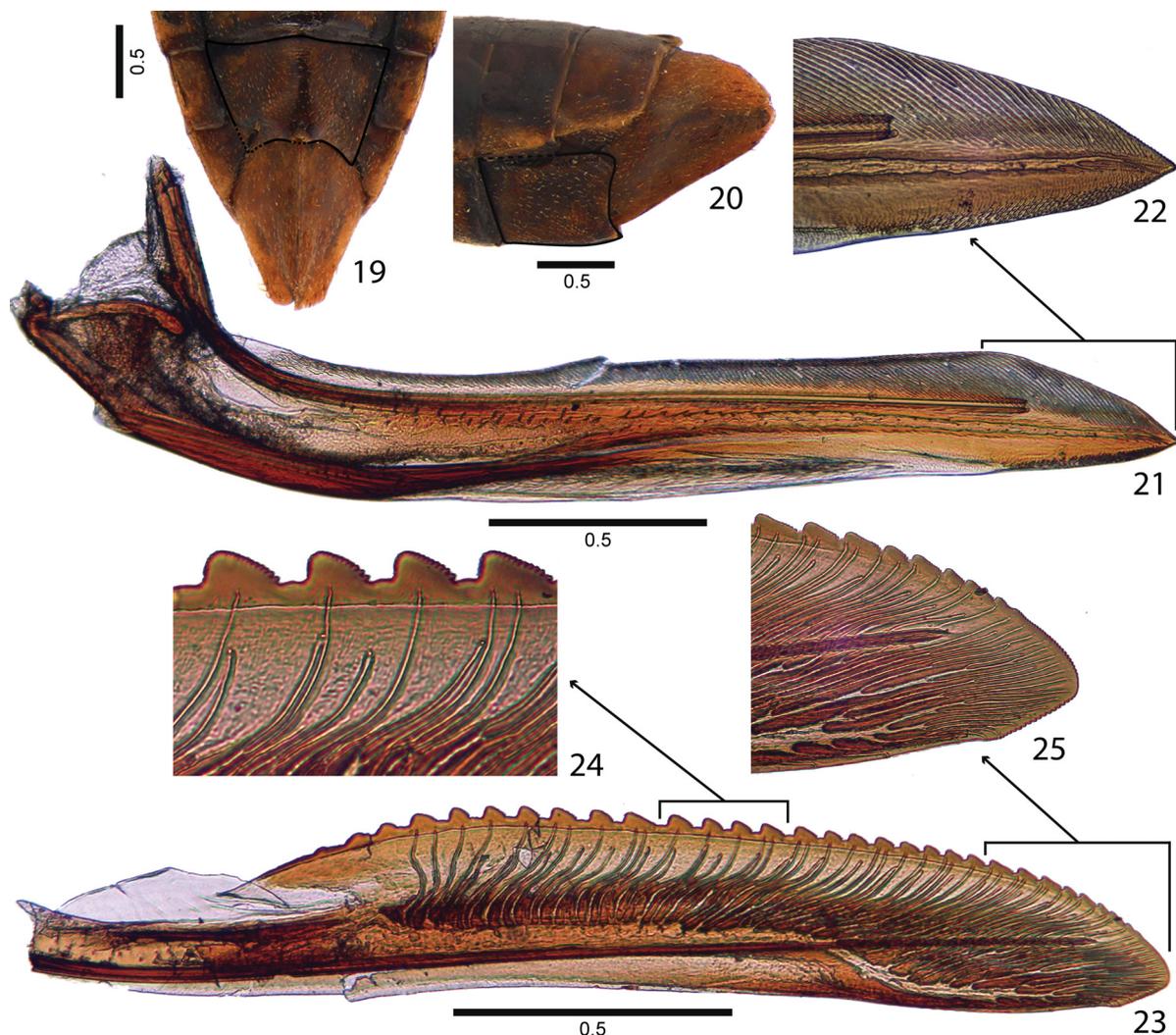
COLORATION. General coloration (Figs 10–12) brown; body pits with white brochosomes. In dorsal view, head with dark brown to black stripe medially, extending from posterior to anterior margin, distinctly narrower basally and ovate from interocellar area to apex; posterior margin with two narrow beige



Figs 10–18. *Tretogonia elegantula* sp. nov., holotype, ♂ (DZUP 215386). **10.** Body, dorsal view. **11.** Body, lateral view. **12.** Face, frontal view. **13.** Valve, pygofer and subgenital plate, lateral view. **14.** Pygofer, dorsal view. **15.** Valve and subgenital plate, ventral view. **16.** Connective and style, dorsal view. **17.** Aedeagus and basal segment of anal tube, lateral view. **18.** Aedeagus, ventral view. Scales in mm.

maculae between coronal suture and inner eye margin, pair of narrow beige stripes between ocelli and inner eye margins. Pronotum with anterior margin narrowly black; anterior half of disk beige, with narrow, transverse irregular black stripe, median line with irregular narrow black stripe, posterior border of beige area black; posterior half of disk uniformly brown. Scutellum mostly beige. Lateral and ventral portions of thorax with small black markings on prothorax and much larger ones on meso- and metathorax, including hind coxa. Forewing with two beige rounded maculae, anterior one larger, margined with dark brown, located between R and claval sulcus; posterior one smaller, with incomplete dark brown margin, located at bases of outer and median anteapical cells; area between beige maculae and basal half of anteapical cells reddish-brown; costal area pale brown; membrane (distal half of anteapical cells and apical cells) pale brown and translucent. Legs with brown, dark brown to black, and beige tonalities; posterior femur with contrasting dark brown and beige areas.

STRUCTURE. Head in dorsal view (Figs 10–12): well produced anteriorly, triangular, median length of crown almost $\frac{1}{2}$ of interocular width and almost $\frac{3}{10}$ of transocular width. Other features of head and thorax much as in *T. diminuta* sp. nov. and in the description of the genus by Young (1968: 166).



Figs 19–25. *Tretogonia elegantula* sp. nov., paratype, ♀ (DZUP 215387). 19–20. Distal portion of abdomen (contour of sternite VII highlighted). 19. Ventral view. 20. Lateral view. 21–22. First valvula. 21. General lateral view. 22. Detail of apical portion. 23–25. Second valvula. 23. General lateral view. 24. Detail of median portion. 25. Detail of apical portion. Scales in mm.

TERMINALIA. Pygofer (Fig. 13) moderately produced posteriorly; broadly rounded distally, angulate at apex; with dispersed microsetae and ventroapically with macrosetae; ventral margin with elongate sinuous process originated from basal third, reaching apical margin, apex acute. Subgenital plate (Fig. 15) not fused to its counterpart; triangular; with numerous dispersed microsetae and few macrosetae near apex; dorsal surface with small tooth at median third; plate (Fig. 13) extending as far posteriorly as pygofer apex. Style (Fig. 16) elongate, attaining tooth of plate; extremely expanded apically, forming conspicuous lobe. Connective (Fig. 16) Y-shaped; very short; stalk without median dorsal keel. Aedeagus symmetrical; shaft (Fig. 17) short, straight, without lateral expansions, with dorsal preapical hump; apical region expanded; in ventral view (Fig. 18), shaft somewhat anchor-shaped apically, with pair of preapical short acute processes directed anteriorad.

Female

Externally similar to male but slightly larger (10.0 mm).

TERMINALIA. Sternite VII (Fig. 19) with posterior margin shallowly emarginate, with slight median lobe. Pygofer (Fig. 20) slightly produced posteriorly; posterior margin rounded; surface with small macrosetae mostly near posterior margin and along ventral margin, with scattered microsetae. First valvula (Fig. 21) with dorsal and ventral margins approximately parallel for most of their length beyond basal curvature; apex acute; dorsal sculptured area (Fig. 22) extending from basal portion to apex of blade, strigate; ventral sculptured area (Fig. 22) restricted to apical portion of blade, formed mostly by scale-like processes; ventral interlocking device distinct on basiventral third of blade; in ventral view, basal portion of first valvula not modified or expanded. Second valvula (Fig. 23) expanded beyond basal curvature; preapical prominence inconspicuous; apex obtuse; dorsal margin convex, with about 30 mostly subtriangular teeth; denticles (Figs 24–25) distributed on teeth and on apical portion of blade, except on apex (ventral dentate apical portion slightly longer than dorsal one); blade with ducts extending towards teeth and apical portion (basalmost three teeth without associated ducts). Gonoplac of the usual Cicadellinae type (narrow basally and distinctly expanded apically; apex obtuse; surface with denticuli on apex and extending anteriorly along ventral margin).

Remarks

This new species can be readily distinguished from other members of the genus by the combination of features given in the diagnosis. The large forewing beige spots will distinguish *T. elegantula* sp. nov. from the three species of the genus that are known only from females (*T. albicans*, *T. conspicua* and *T. lateritia*). The forewings of *T. conspicua* have pale spots (see digital images in Wilson *et al.* 2009), but they are much smaller than those of the new species. As in the case of *T. diminuta* sp. nov., *T. elegantula* sp. nov. also keys to couplet six in Young's monograph due to the absence of basal aedeagal processes (Young 1968); the same comparative notes provided for *T. diminuta* sp. nov. apply here because the two new species share the presence of preapical aedeagal processes.

Tretogonia dentalis Emmrich, 1988

Figs 26–34

Tretogonia dentalis Emmrich, 1988: 189.

Diagnosis

Forewing with longitudinal broad beige band extending along costal margin from base to level of claval apex (Fig. 27); pygofer process with distal half directed dorsally (Fig. 29), serrated apically (Fig. 30); style with apophysis moderately expanded apically (Fig. 32); aedeagus with dorsal lobe followed by pair of dentiform processes directed anteriorad (Fig. 33).

Material examined

BRAZIL • 1 ♂; “BRASIL, MS [State of Mato Grosso do Sul], Porto Murtinho, / Faz. Progresso 21°35'57"S / 57°45'26"W / 23.II.2009 A. / Paladini, D.R. Parizotto, P.C. / Grossi leg. Luz”; DZUP.

Type locality

San Bernardino, Paraguay (Emmrich 1988).

Measurement

Body length: ♂ 10.2 mm.

Description

Male

COLORATION. General coloration (Figs 26–28) brown. In dorsal view, head with small darker spots near posterior margin. Face light brown. Pronotum with dark brown, irregular Y-shaped marking on anterior half, its arms reaching humeri. Forewing with longitudinal broad beige band extending along costal margin from base to level of claval apex; inner border of this band with dark brown line; area between dark brown line and brachial cell reddish-brown; area of apical cells and distal part of anteapical cells light brown. Legs mostly brown to reddish-brown.

STRUCTURE. Head in dorsal view (Figs 26–28): moderately produced anteriorly, anterior margin rounded, median length of crown slightly more than $\frac{4}{10}$ of interocular width and almost $\frac{3}{10}$ of transocular width. Other features of head and thorax much as in *T. diminuta* sp. nov. and in the description of the genus by Young (1968: 166).

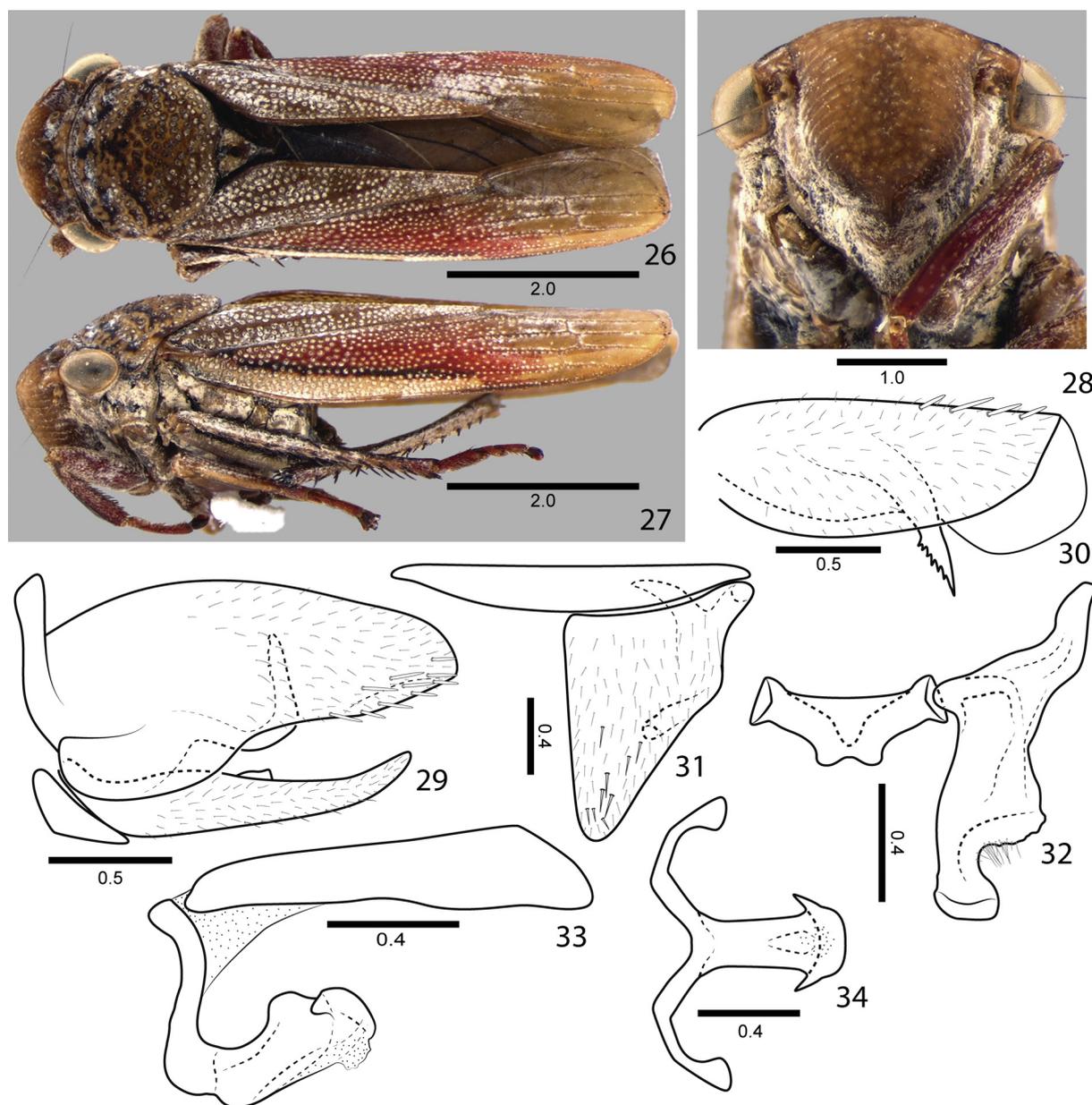
TERMINALIA. Pygofer (Fig. 29) moderately produced posteriorly, broadly rounded distally, angulate at apex; with dispersed microsetae and ventroapically with macrosetae; ventral margin with elongate process originated from basal third, its distal half directed dorsally, serrated apically (Fig. 30). Subgenital plate (Fig. 31) not fused to its counterpart; triangular, with small lobe on basal half of outer margin; with numerous dispersed microsetae and few macrosetae near apex; dorsal surface with small tooth at median third; plate (Fig. 29) not extending as far posteriorly as pygofer apex. Style (Fig. 32) elongate, attaining tooth of plate; apophysis moderately expanded and obtuse apically. Connective (Fig. 32) Y-shaped; very short; stalk without median dorsal keel. Aedeagus symmetrical; shaft (Fig. 33) short, straight, without lateral expansions; with dorsal lobe followed by pair of dentiform processes; in ventral view (Fig. 34), shaft somewhat anchor-shaped apically, with afore-mentioned pair of preapical dentiform processes directed anteriorad.

Remarks

Our identification of *T. dentalis* is based on a comparison of our male specimen from the State of Mato Grosso do Sul with the original description and illustrations by Emmrich (1988). This is the first record of *T. dentalis* from Brazil. This species, described based on a single male from Paraguay and also recorded from Argentina (Dellapé 2016), can be recognized by the combination of features provided in the diagnosis. Our comparative studies on species of *Tretogonia* suggest that *T. dentalis* could be a junior synonym of *T. lateritia* (Taschenberg, 1884). The color pattern of the female holotype of the latter species, described from “Paraná” and deposited at the Martin-Luther-Universität (Halle-Wittenberg, Germany), is quite similar to that of our male specimen (see digital image of the holotype in Wilson *et al.* 2009). However, we refrain from proposing a new synonym at this time because the taxonomy of *Tretogonia* is currently based mainly on features of the male terminalia (see Young 1968). Also, we do not have at hand a female specimen for comparison with the holotype of *T. lateritia*.

Discussion

With the addition of *T. diminuta* sp. nov. and *T. elegantula* sp. nov., *Tretogonia* now comprises 15 Neotropical species, being a moderately diverse genus within the Proconiini; the largest genus of the tribe, with 61 species, is *Oncometopia* Stål, 1869 (see Rakitov 2016.) Accurate identification of some of the species of *Tretogonia* is not always easy because subtle details of the male terminalia must be considered. For instance, minor differences in the apical portion of the style apophysis currently form the basis for recognizing *T. callifera*, *T. cribrata* and *T. notatifrons*, three species widely distributed in South America (Young 1968). Thus, it is possible that new synonyms, in addition to that suggested above for *T. dentalis*, will have to be proposed in the future.



Figs 26–34. *Tretogonia dentalis* Emmerich, 1988, ♂ (DZUP 215388). **26.** Body, dorsal view. **27.** Body, lateral view. **28.** Face, frontal view. **29.** Valve, pygofer and subgenital plate, lateral view. **30.** Pygofer, dorsal view. **31.** Valve and subgenital plate, ventral view. **32.** Connective and style, dorsal view. **33.** Aedeagus and basal segment of anal tube, lateral view. **34.** Aedeagus, ventral view. Scales in mm.

This study, along with other recent publications on the taxonomy of Proconiini (e.g., Takiya & Mejdalani 2011; Mejdalani *et al.* 2012; Rakitov 2016; Silva *et al.* 2017; Pinto *et al.* 2017), shows that the fauna of this tribe in the Neotropical region is still poorly known, perhaps especially so in the Amazon forest. Additional studies carried out in megadiverse countries, such as Brazil and Peru, will certainly uncover many more new species and, perhaps, a few new genera from this interesting leafhopper tribe. Our studies on *Tretogonia* will continue with a morphological phylogenetic analysis of the genus.

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