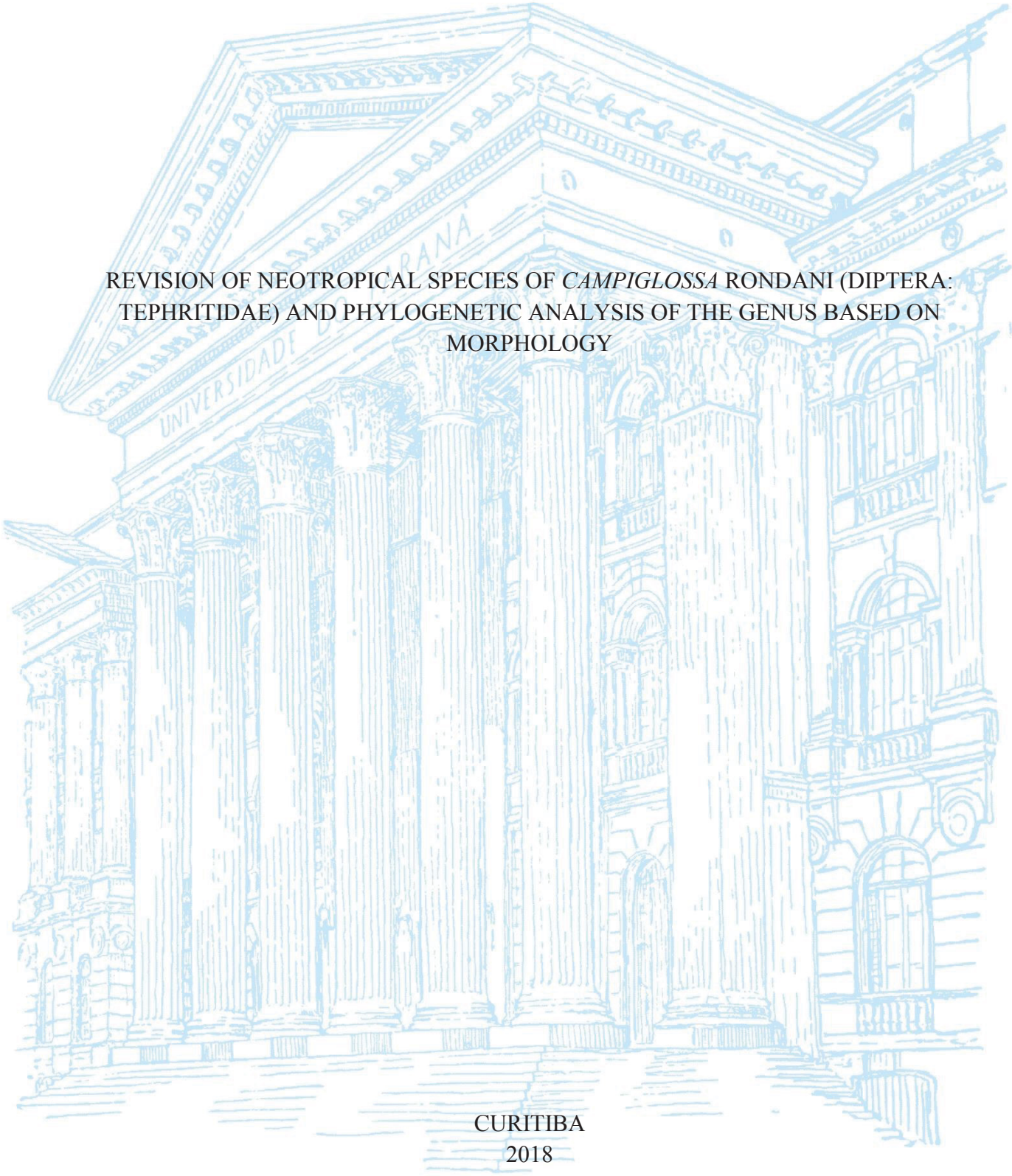
UNIVERSIDADE FEDERAL DO PARANÁ

SILVANA LAMPERT



REVISION OF NEOTROPICAL SPECIES OF *CAMPIGLOSSA* RONDANI (DIPTERA: TEPHRITIDAE) AND PHYLOGENETIC ANALYSIS OF THE GENUS BASED ON MORPHOLOGY

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Tese apresentada à Coordenação do Programa de Pós-Graduação em Ciências Biológicas, Área de Concentração em Entomologia, do Setor de Ciências Biológicas da Universidade Federal do Paraná, como requisito parcial para obtenção do título de Doutor em Ciências Biológicas.

Orientadora: Profa. Dra. Luciane Marinoni
Co-orientador: Dr. Allen L. Norrbom

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Os membros da Banca Examinadora designada pelo Colegiado do Programa de Pós-Graduação em CIÊNCIAS BIOLÓGICAS (ENTOMOLOGIA) da Universidade Federal do Paraná foram convocados para realizar a arguição da tese de Doutorado de **SILVANA LAMPERT** intitulada: **REVISION OF NEOTROPICAL SPECIES *CAMPIGLOSSA* RONDANI (DIPTERA: TEPHRITIDAE) AND PHYLOGENETIC ANALYSIS OF THE GENUS BASED ON MORPHOLOGY**, após terem inquirido a aluna e realizado a avaliação do trabalho, são de parecer pela sua APROVAÇÃO no rito de defesa.

A outorga do título de doutor está sujeita à homologação pelo colegiado, ao atendimento de todas as indicações e correções solicitadas pela banca e ao pleno atendimento das demandas regimentais do Programa de Pós-Graduação.

Curitiba, 02 de Julho de 2018.

LUCIANE MARINONI
Presidente da Banca Examinadora (UFPR)

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CLAUDIO JOSÉ BARROS DE CARVALHO
Avaliador Interno (UFPR)

DEDICATÓRIA

Aos meus pais

Soeli Lampert e Marcos Primo Lampert

Ao meu amor

Marcoandre Savaris

AGRADECIMENTOS

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RESUMO

As espécies neotropicais do gênero *Campiglossa* Rondani (Diptera: Tephritidae) foram revisadas. *Campiglossa* possui 30 espécies, incluindo 21 novas: *C. conspersa* (Wulp) (México); *C. despecta* (Wulp) (México); *C. guttularis* (Wulp) (México); *C. hyalina* (Foote) (Guatemala, México); *C. luculenta* (Wulp) (Costa Rica, México, Venezuela); *C. pallidipennis* (Cresson) (México, USA); *C. taenipennis* (Hering) (Costa Rica, Peru); *C. trinotata* (Foote) (Costa Rica, Guatemala, México); *C. venezuelensis* (Hering) (Venezuela). *Campiglossa* n. sp. 1 (Costa Rica, Guatemala, México); *Campiglossa* n. sp. 2 (México); *Campiglossa* n. sp. 3 (México); *Campiglossa* n. sp. 4 (México); *Campiglossa* n. sp. 5 (Venezuela); *Campiglossa* n. sp. 6 (México); *Campiglossa* n. sp. 7 (Costa Rica, México); *Campiglossa* n. sp. 8 (Guatemala); *Campiglossa* n. sp. 9 (República Dominicana); *Campiglossa* n. sp. 10 (México); *Campiglossa* n. sp. 11 (Equador, México, Panamá); *Campiglossa* n. sp. 12 (México); *Campiglossa* n. sp. 13 (México); *Campiglossa* n. sp. 14 (Peru, Venezuela); *Campiglossa* n. sp. 15 (México); *Campiglossa* n. sp. 16 (Venezuela); *Campiglossa* n. sp. 17 (México); *Campiglossa* n. sp. 18 (Costa Rica, México, Peru); *Campiglossa* n. sp. 19 (Equador, Venezuela); *Campiglossa* n. sp. 20 (Argentina); *Campiglossa* n. sp. 21 (Guatemala). Para cada espécie de *Campiglossa* que ocorre na região Neotropical foi realizado a descrição, ilustrações, dados de distribuição, notas sobre a biologia e dados das plantas hospedeiras. Uma combinação revisada é proposta para *Campiglossa freyae* Lindner que retorna para o gênero *Trupanea* Schrank. Novas combinações são propostas para espécies previamente incluídas em *Campiglossa*: *Dyseuaresta cassara* (Wulp), *Dioxyna enigma* (Hering), *Dioxyna fibulata* (Wulp), *Dioxyna obsoleta* (Wulp) e *Trupnea freyae* Lindner. As relações filogenéticas de *Campiglossa* utilizando dados morfológicos foram analisadas e *Campiglossa* é um gênero monofilético.

Palavras-chave: moscas-das-frutas, Tephritinae, Tephritini, taxonomia, planta hospedeira, Asteraceae, novo mundo.

ABSTRACT

The Neotropical species of the genus *Campiglossa* Rondani (Diptera: Tephritidae) are revised. A total of 30 species are recognized, including 21 new species: *C. conspersa* (Wulp) (Mexico); *C. despecta* (Wulp) (Mexico); *C. guttularis* (Wulp) (Mexico); *C. hyalina* (Foote) (Guatemala, Mexico); *C. luculenta* (Wulp) (Costa Rica, Mexico, Venezuela); *C. pallidipennis* (Cresson) (Mexico, USA); *C. taenipennis* (Hering) (Costa Rica, Peru); *C. trinotata* (Foote) (Costa Rica, Guatemala, Mexico); *C. venezuelensis* (Hering) (Venezuela); *Campiglossa* n. sp. 1 (Costa Rica, Guatemala, Mexico); *Campiglossa* n. sp. 2 (Mexico); *Campiglossa* n. sp. 3 (Mexico); *Campiglossa* n. sp. 4 (Mexico); *Campiglossa* n. sp. 5 (Venezuela); *Campiglossa* n. sp. 6 (Mexico); *Campiglossa* n. sp. 7 (Costa Rica, Mexico); *Campiglossa* n. sp. 8 (Guatemala); *Campiglossa* n. sp. 9 (Dominican Republic); *Campiglossa* n. sp. 10 (Mexico); *Campiglossa* n. sp. 11 (Ecuador, Mexico, Panama); *Campiglossa* n. sp. 12 (Mexico); *Campiglossa* n. sp. 13 (Mexico); *Campiglossa* n. sp. 14 (Peru, Venezuela); *Campiglossa* n. sp. 15 (Mexico); *Campiglossa* n. sp. 16 (Venezuela); *Campiglossa* n. sp. 17 (Mexico); *Campiglossa* n. sp. 18 (Costa Rica, Mexico, Peru); *Campiglossa* n. sp. 19 (Ecuador, Venezuela); *Campiglossa* n. sp. 20 (Argentina); and *Campiglossa* n. sp. 21 (Guatemala). For each species of *Campiglossa* occurring in the Neotropical Region we provided a description, illustrations, distributions, notes on the biology and host plant data. *Campiglossa freyae* Lindner is returned to the genus *Trupanea* Schrank. The following new combinations are proposed for species previously included in *Campiglossa*: *Dyseuaresta cassara* (Wulp), *Dioxyna enigma* (Hering), *Dioxyna fibulata* (Wulp) and *Dioxyna obsoleta* (Wulp), and *Trupnea freyae* Lindner, revised combination, also is removed from *Campiglossa*. The phylogenetic relationships of *Campiglossa* using morphological data are analyzed and *Campiglossa* is supported as monophyletic genus.

Key words: fruit flies, Tephritinae, Tephritini, taxonomy, host plants, Asteraceae, New World.

SUMÁRIO

Introduction

Tephritidae, commonly known as true fruit flies, are the family of greatest agricultural relevance within the Order Diptera (White & Elson-Harris 1992; Norrbom *et al.* 1999; Savaris *et al.* 2016; Mengual *et al*. 2017). Immatures of most species are phytophagous (except representatives of Tachiniscinae, which parasitize larvae of Lepidoptera, and some Phytalmiinae that are saprophagous) and use fruits, flowers, seeds, stems or roots of diverse families and species of plants as host for larval development (Foote 1967; Foote *et al.* 1993; Norrbom *et al.* 1999; Prado *et al.* 2002; Norrbom & Prado 2006; Norrbom 2010). The family comprises more than 4,911 species in approximately 500 genera and overall has a worldwide distribution (Norrbom *et al.* 1999; Norrbom 2010; Brown *et al*. 2018; Borkent *et al*. 2018). In the Neotropical Region the number of taxa described is about 950 species in 71 genera (Norrbom 2010; Borkent *et al*. 2018).

The genus *Campiglossa* Rondani, 1870 has a cosmopolitan distribution, with nearly 200 species (Novak 1974; Norrbom *et al*. 1999; Norrbom 2010). *Campiglossa* was described by Rondani (1870) as a subgenus of *Oxyna* Robineau-Desvoidy. Hendel (1927) designated *Tephritis irrorata* Fallén as the type species for the genus.

Species of *Campiglossa* were described in many diferent genera, including: *Gonioxyna* Hendel (1927); *Paroxyna* Hendel (1927); *Sinotephritis* Chen (1938); *Aliniana* Hering (1951); *Whiteina* Korneyev (1990); and *Pseudacinia* Korneyev (1990). Later, these genera were recognized as synonyms of *Campiglossa* (Merz 1994; Korneyev 1990; Norrbom *et al*. 1999).

Currently the neotropical fauna of *Campiglossa* includes 17 species with distributions mainly at higher elevations in Mexico and Central and South America. Some species extend north into the southwestern USA (Norrbom *et al.* 1999; Norrbom 2010). In the tephritid literarure knowledge of the neotropical species of *Campiglossa* is very limited. Walker (1849, as *Trypeta*) described two species, *T. aesia* from the Galapagos Islands and *T. cassara*, from Peru. Wulp (1899, as *Ensina* and *Tephritis*) provided descriptions and presented an identification key to six species (*E. conspersa*, *E. despecta*, *E. guttularis*, *E. luculenta*, *T. fibulata* and *T. obsoleta*) from Mexico. Lindner (1928, as *Trypanea*) described *T. freyae* from Argentina, and Curran (1928, as *Tephritis*) described *T. floccosa* from the Virgin Islands. Curran (1934, as *Paroxyna*) described *P. crockeri* from the Galapagos, and Hering (1939, as *Paroxyna*) described *P. venezolensis* from Venezuela. Hering (1941, as *Paroxyna*) described and provided an identification key to two species (*P. enigma*, *P. taenipennis*) from Peru and Uruguay. Hering (1944, as *Paroxyna*) described *P. extincta* from Peru, and Foote & Blanc

(1979, as *Gonioxyna*) described two species (*G. hyalina*, *G. trinotata*) from Mexico and Guatemala. An additional 21 new species from the Neotropical Region are described in this paper.

The neotropical species of *Campiglossa* have been little studied and their taxonomy, distributions and natural history are poorly understood. We have discovered that many specimens in collections represent new species and had not been described (Foote 1980; Foote *et al*. 1993; Norrbom 2010). The treatment of *Campiglossa* in the literature after 1979 is limited to catalogs, identification manuals, and reports of host and distribution data; no species thereafter have been described.

Regarding host plant relationships and biologies, most *Campiglossa* species are unknown (Headrick & Goeden 1999). A few studies reported data about biology or life history (Novak & Foote 1968; Goeden *et al*. 1994a). The species of *Campiglossa* are associated with Asteraceae, primarily with plants of the tribes Astereae, Senecioneae and Lactuceae (Foote *et al*. 1993; Norrbom 2010). Most *Campiglossa* species breed in flowerheads, but one Mexican species mines stems (Norrbom 2010).

The phylogenetic relationships among the species of *Campiglossa* and other genera of the tribe Tephritini are poorly understood. Information about the natural history and distributions of neotropical species in the tephritid literature is sparse.

This study includes a revision of neotropical species of *Campiglossa* and a phylogenetic analysis based on morphological characters. For each species of neotropical *Campiglossa*, we provide a morphological description, diagnoses and illustrations as well as distributional data, and, as available, host plant information. We also include a morphologically based phylogenetic analysis to test the monophyly of *Campiglossa* and hypotheses of relationships among included species.

Objectives

This thesis aims to revise the taxonomic knowledge of the neotropical fauna of the genus *Campiglossa* and to contribute to the knowledge of its origins and diversification.

The specific objectives are:

- Identify, describe, diagnose, and illustrate all species of *Campiglossa* occurring in the Neotropical Region;
- Record and summarize distributions and host plant data for each species;
- Test the monophyly of *Campiglossa* through the application of phylogenetic analysis using morphological data.

Materials and methods

Morphological analysis

The morphological study was conducted with stereoscopic microscopy, mainly with dry and pinned specimens. The right wing of at least one male and one female was removed for slide mounting in Euparal. Abdomens were removed with microforceps and macerated in a hot 10% sodium hydroxide solution between 5 and 10 minutes to clear the structures. Cleared terminalia were then transferred to glycerin for observation, description, and illustration. The dissected abdomen was placed in a plastic microvial filled with glycerin and attached to the pin supporting the remainder of the insect. Species descriptions are composite and are not based solely on holotypes. The measurements were made in accord with Norrbom *et al*. (2012), generally based on five specimens, if available (the holotype, the largest, the smallest, and two other). The following measurements were made: Body length (Fig. 282) (anterior margin of frons to apex of last abdominal tergite (apex of oviscape for female)); head height in lateral view (Fig. 283) (occellar tubercle to ventral margin of gena); head width in lateral view (Fig. 283) (anterior margin of frons to postocellar seta); frons length (lunule to vertex); frons width (Fig. 282) (width between eyes on vertex); frons width, anterior margin (width between eyes at anterior margin); gena-to-eye ratio (Fig. 283) (genal height, immediately below maximum eye height/eye height (maximum diameter); eye height (Fig. 283) (maximum diameter); eye width (anterior margin to posterior margin); thorax length (Fig. 282) (anterior margin of scutum to apex of scutellum); wing length (Fig. 284) (base of Costa to wing apex between apices of veins R_{4+5} and M_1); wing width (Fig. 284) (at broadest part, in vicinity of apex of vein R_1 to margin of cell m_4); oviscape length (Fig. 285) (medially on ventral side from extreme base to apex); oviscape-to-thorax ratio (oviscape length/thorax length; eversible membrane length in ventral view (Fig. 285) (from base at connection of oviscape to base of aculeus); aculeus length in ventral view (Fig. 285) (from base at connection of eversible membrane to apex); spermatheca length (from base to apex); glans length (from preglans to apex of vesical or apical tube).

Illustrations

Most of the illustrations are digital photographs taken with a Visionary Digital System (DUN, Inc.) and then enhanced using PhotoshopCS6 to adjust the color and make minor corrections (e.g., remove debris, add missing setae). The habitus illustrations (Figs. 1–2) are

composites of images of each major body part (head, thorax, legs, wings, and abdomen) from dorsal view.

Terminology

We use the morphological terminology of White *et al.* (1999) and McAlpine (1981), except for the wing venation, which follows Cumming & Wood (2017). The most significant veins and cells are labeled on Figure 3.

Material examined

Acronyms for institutions where examined specimens are deposited follow Norrbom *et al.* (1999): AMNH - American Museum of Natural History, New York; BMNH - The Natural History Museum (formerly British Museum (Natural History)), London; CAS - California Academy of Science, San Francisco; CNC - Canadian National Collection of Insects, Ottawa, Canada; INBio - Instituto de Biodiversidad, Santo Domingo de Heredia, Costa Rica; IEXA – Instituto de Ecologia, Xalapa, Mexico; SIZK - Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Kiev, Ukraine; SMN - Staatliches Museum fur Naturkunde, Rosenstein, Germany; NMW - Naturhistorisches Museum, Vienna; SMT- Statliches Museum für Tierkunde, Dresden; TAUI - Tel Aviv University, Israel; USNM - National Museum of Natural History, Smithsonian Institution, Washington, USA; UVG – Universidad del Valle de Guatemala; ZIL – Zoological Institute, Lund.

Label data for primary types are cited within quotation marks (" "). Brackets ([ ]) are used to indicate additional information not on the original labels, and slash bars (/ /) are used to indicate label separation. How the specimen is preserved, the condition of the specimen and where it is deposited are also reported.

Label data for all examined specimens were recorded in the New World fruit fly specimen database maintained by Allen L. Norrbom. A USNM barcode label was added to many specimens without barcode labels. The barcode labels do not indicate ownership and are used solely to provide unique identifier numbers. In the “Type data” and “Specimens examined” sections the barcode number is listed after the depository acronym for each specimen or series of specimens. Host plant data were transcribed directly from labels, as available, and are also based on rearings by Norrbom from flowerheads collected in the field. Vouchers of these host plants were determined mainly by Harold Robinson and are deposited in the herbaria of the National Museum of Natural History, Smithsonian Institution (USNM).

Characters and terminals

The development of the character matrix for phylogenetic analysis is morphologically based. Character elaboration considered the following criteria: topological correspondence among the observed structures and the independence and hierarchy of characters and states (Hawkins *et al*. 1997). Characters were arranged in a binary or multi-state form with observations and discussions about primary homologies, delineation, independence and hierarchy of states (Hawkins *et al*. 1997; Sereno 2007). The character matrix was constructed in Winclada ver. 1.00.08 (Nixon 2002).

The cladistic analyses were carried out using the program TNT version 1.5 no taxon limit (Goloboff & Catalano 2016). *Mastigolina rufocomata* (Munro, 1947) was used to root the tree. The analysis was performed with a traditional heuristic search (by the command traditional search). The parameters utilized in all searches were as follows: "Max.tree"=100,000; "random seed"=1000; "number of additional sequences"=10,000; "tree to save per replication"=10, utilizing "tree bisection reconnection" (TBR) as the permutation algorithm of the branches.

Further analysis was using performed applied weighing (Goloboff 1993). Heuristic searches using implied weights were carried out using the same parameters cited earlier. A TNT script (setk.run) written by Salvador Arias was used to calculate the appropriate value for the constant K (for details see Goloboff *et al*. 2008). The script returned a value of K =12.153320 for our data set, which was then applied. The branch support was calculated by the Relative Bremer Support in the software TNT, with stored suboptimal trees with lengths up to 10 additional steps. The Relative Bremer Support indicates the proportion between favorable and contrary evidence to the existence of a clade (Goloboff & Farris 2001).

Analysis was made with the objective of evaluating the monophyly of the genus and relationships among the species. Neotropical species of *Campiglossa* were included as terminals, except for the species whose types were not found *Campiglossa basifasciata* (Hering, 1941), *Campiglossa bigutta* (Hering, 1941), *Campiglossa extincta* (Hering, 1944) and *Campiglossa floccosa* (Curran, 1928), *Campiglossa aesia* (Walker, 1849) by the type being in bad condition. Also included in the analysis were representative species of *Campiglossa* from all biogeographical regions: *Campiglossa achyrophori* (Loew, 1869) (Palearctic) 1m 1f; *C. albiceps* (Loew, 1873) (Nearctic) 1m 1f; *C. anchorata* (Munro, 1957) (Afrotropical) 1m 1f; *C. anomalina* (Bezzi, 1924) (Afrotropical) 1m 1f; *C. argyrocephala* (Loew, 1844) (Palearctic) 1m 1f; *C. cain* (Hering, 1937) (Afrotropical) 1m; *C. clathrata* (Loew, 1862) (Nearctic) 1m 1f; *C. contingens* (Becker, 1908) (Palearctic) 1m 1f; *C. deserta*

(Hering, 1939) (Palearctic) 1m 1f; *C. defasciata* (Hering, 1936) (Palearctic) 1m 1f; *C. difficilis* (Hendel, 1927) (Palearctic) 1m 1f; *C. doronici* (Loew, 1856) (Palearctic) 1m 1f; *C. duplex* (Becker, 1908) (Palearctic) 1m 1f; *C. farinata* (Novak, 1974) (Nearctic) 1m 1f; *C. fenestrata* (Munro, 1957) (Afrotropical) 1m; *C. frolica* (Dirlbek & Dirlbekova, 1974) (Palearctic) 1m 1f; *C. fuscata* (Macquart, 1851) (Australasian) 1m 1f; *C. genalis* (Thomson, 1869) (Nearctic) 1m 1f; *C. granulata* (Munro, 1957) (Afrotropical) 1m 1f; *C. guttella* (Rondani, 1870) (Palearctic) 1m 1f; *C. hirayamae* (Matsumura, 1916) (Palearctic and Oriental) 1m 1f; *C. ignobilis* (Loew, 1861) (Afrotropical) 1m 1f; *C. intermedia* (Zia, 1937) (Afrotropical) 1m 1f; *C. irrorata* (Fallen, 1814) (Palearctic) 1m; *C. jamesi* (Loew, 1862) (Nearctic) 1m 1f; *C. jugosa* (Ito, 1984) (Palearctic) 1m 1f; *C. loewiana* (Hendel, 1927) (Palearctic) 1m 1f; *C. media* (Malloch, 1938) (Australasian) 1f; *C. luxorientis* (Hering, 1940) (Palearctic) 1m 1f; *C. messalina* (Hering, 1937) (Palearctic) 1m 1f; *C. misella* (Loew, 1869) (Palearctic and Oriental) 1m 1f; *C. peringueyi* (Bezzi, 1924) (Afrotropical) 1m 1f; *C. plantaginis* (Haliday, 1833) (Palearctic) 1m 1f; *C. punctella* (Fallen, 1814) (Palearctic) 1m 1f; *C. siphonina* (Bezzi, 1918) (Afrotropical) 1m 1f; *C. spinata* Munro, 1957 (Afrotropical) 1f; *C. umbritica* (Munro, 1957) (Afrotropical) 1m 1f.

Also included as terminals were species considered new or revised combinations in this work: *Trupanea freyae* Lindner, 1928, *Dyseuaresta cassara* (Walker, 1849), *Dioxyna enigma* (Hering, 1941), *Dioxyna fibulata* (Wulp, 1900), and *Dioxyna obsoleta* (Wulp, 1900).

Outgroups were selected based on the classification of Norrbom *et al.* (1999). The following outgroups were included: *Campiglossa* genus group: *Dioxyna chilensis* (Macquart) (Neotropical) 10m 10f; *Dioxyna crockeri* (Curran) (Neotropical) 1m 1f; *Mesoclanis polana* (Munro 1931) (Afrotropical) 1m 1f; *Scedella caffra* (Loew, 1861) (Afrotropical) 1m 1f; *Scedella praetexta* Loew, 1861 (Afrotropical) 1m 1f. *Sphenella* genus group: *Mastigolina rufocomata* (Munro, 1947) (Afrotropical) 1m 1f. *Dyseuaresta* genus group: *Dyseuaresta adelphica* (Hendel, 1914) (Neotropical) 1m 1f.

Results and discussion

Revision of Neotropical species *Campiglossa* Rondani (Diptera: Tephritidae)

Genus *Campiglossa* Rondani, 1870

Campiglossa Rondani, 1870: 121, type species – *Tephritis irrorata* Fallen, by original designation; Wulp, 1899: 411 [(*Ensina*) key to 5 spp. [NE, NT: Mexico & Central America]].
Gonioxyna Hendel, 1927: 23, type species – *G. magniceps* Hendel, by subsequent designation of Hendel 1927: 160; Foote & Blanc, 1979: 165 [key to 3 spp.).
Paroxyna Hendel, 1927: 23, type species – *Trypeta tessellata* Loew, by subsequent designation of Hendel 1927: 146, misidentified, action by ICZN required to validate designation of *Trypeta producta* Loew by White 1986: 150; Hering, 1941: 158 [key to 7 spp. from Peru]; Foote *et al*. 1993: 274 [USA and Canadian fauna].
Sinotephritis Chen, 1938: 148, type species – *S. propria* Chen, by original designation.
Aliniana Hering, 1951: 12, type species – *A. aliena* Hering, by original designation (= *quadriguttata* Hendel).
Whiteina Korneyev, 1990: 460, type species – *Paroxyna loewiana* Hendel, by original designation.
Pseudacinia Korneyev, 1990: 458, type species – *Euaresta aliniana* Hering, by original designation.
Gomoxyna Foote, 1984: 90, missp. *Gonioxyna* Hendel. Attributed to "authors".
Parexyna Foote 1984: 112, missp. *Paroxyna* Hendel. Attributed to "authors".
Paroxyma Palmer & Bennett 1988: 222, missp. *Paroxyna* Hendel.
Stylia: Hering, 1954: 167, misid. See Foote & Blanc 1979: 172; also see Hardy 1973: 325, Cogan & Munro 1980: 548.

Diagnosis of Neotropical species. *Campiglossa* species differ from all other Tephritidae by the following combination of characters: Frons with 2 pairs of acuminate frontal setae (Figs. 281, 283); 2 pairs of orbital setae, posterior seta white and lanceolate; postocular setae mixed, acuminate and lanceolate; proboscis slightly elongate, geniculate (Fig. 283); gena with row of lanceolate white setae on ventral margin. Second anepisternal seta lanceolate; scutellum with 2 pairs of acuminate setae, apical seta generally half as long as basal seta (Fig. 276); wing reticulate (Figs. 3–54), with hyaline spots usually rounded; pterostigma brown, usually with

subapical marginal orange spot; wing with basal third hyaline reticulate from cells bc and c to cell m_4; crossveins r-m and dm-m bordered on both sides by dark brown narrow areas (Figs. 3–54); legs entirely or mostly yellow, fore and hind femora usually and mid femur sometimes brown to black at least basally; hind femur with pair of anterodorsal and posterodorsal preapical setae. Lateral surstylus short, in lateral view with dorsal lobe serrate; medial surstylus with pair of apical prensisetae, both conical, lateral prensiseta usually half size of medial; medial prensiseta sometimes on dorsal lobe; preglans of distiphallus with spines (Fig. 280).

Description. Body: dark brown in ground color, mostly gray microtrichose. Setae dark brown to black (Figs. 1–2).

Head: Slightly higher than long (Fig. 283). Mostly yellow, ocellar tubercle brown to black; 2 frontal setae, acuminate, equal in size, dark brown to black; anterior orbital seta acuminate, posterior seta smaller, white and lanceolate; postocular setae mixed, acuminate and lanceolate; face and parafacial whitish; gena with row of lanceolate, white setae on ventral margin; antenna usually yellow to brown, first flagellomere, longer than wide (Fig. 283).

Thorax: Ground color dark brown (Figs. 1–2, 276); scutum gray microtrichose, or microtrichia yellowish to golden in few species; scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly; second anepisternal seta and anepimeral seta lanceolate, white to yellow (except in *Campiglossa* n. sp. 22, with second anepisternal seta acuminate); other thoracic setae acuminate, dark brown to black. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta (Fig. 276).

Wing: Usually with basal third hyaline reticulate from cells bc and c to cell m_4 (Figs. 3–54); most species with brown area bordering crossvein r-m broader than length of r-m, and brown area bordering crossvein dm-m broader than length of dm-m; cells m_1 and m_4 with 3 marginal or submarginal hyaline spots each.

Legs: Entirely or mostly yellow. Femora usually brown to black except extreme apex area (sometimes with middle femur yellowish); hind femur with pair of anterodorsal and posterodorsal preapical setae.

Abdomen: Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite; male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae; most species with pair of submedial dark spots halfway between anterior and posterior margins of each tergite (Fig. 279).

Female terminalia: Oviscape brown to dark brown, with evenly distributed brown setulae (Fig. 275); eversible membrane with a cluster of denticles (Figs. 55–78); aculeus pale brown, tip rounded or pointed (Figs. 103–126); spermathecae brown, elongate or spherical (Figs. 127–150), surface with papillae.

Male terminalia: Epandrium in posterior view with inverted U-shaped, with setulae and microtrichia distributed evenly (Figs. 151–178). Lateral surstylus in posterior view medially curved, setulose except apically, in lateral view with dorsal lobe with margin serrate or ondulate (Figs. 179–206). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial; medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines in preglans (Figs. 207–234).

Distribution. The genus *Campiglossa* has a cosmopolitan distribution, with greatest species diversity in the Paleartic Region (88 species). Currently the Neotropical fauna of the genus includes 30 species with distributions mainly at higher elevations in Mexico, and Central and South America. Mexico has the greatest number of recorded species (20 species), followed by Costa Rica and Venezuela (6 species), Guatemala (5 species), Peru (3 species), Ecuador (2 species), Argentina, Dominican Republic and Panama (1 species).

Biology. Host plants are known for 20 of the 30 neotropical species of *Campiglossa*. Most of the reared species emerged from flowerheads of Asteraceae (one species mines stems), primarily from plants of the tribes Astereae, Senecioneae and Lactuceae (Foote *et al*. 1993; Norrbom 2010). There are records from 6 tribes and 29 species of Asteraceae. Tribe Astereae: *Conyza uliginosa* (Benth.) (*C. luculenta*); *Erigeron floribundus* (Kunth) Sch. Bip. (*Campiglossa* n. sp. 14); *Jessea megaphylla* (B.L.Rob. & Greenm.) R.M.King & H.Rob. (*C. taenipennis*); *Jessea cooperi* (Greenm.) H.Rob. & Cuatrec. (*Campiglossa* n. sp. 1); *Lasiocephalus patens* (H.B.K.) Cuatr. (*Campiglossa* n. sp. 5); *Noticastrum marginatum* (Kunth) Cuatrec. (*C. luculenta*, *Campiglossa* n. sp. 14, *Campiglossa* n. sp. 18 and *Campiglossa* n. sp. 19); *Oritrophium nevadense* (Wedd.) (*C. luculenta*); *Oxylobus arbutifolius* (Kunth) A. Gray (*Campiglossa* n. sp. 3); *Oxylobus grandulifera* (Sch. Bip.) A. Gray (*Campiglossa* n. sp. 5); *Pentacalia andicola* (Turcz.) Cuatr. (*Campiglossa* n. sp. 5); *Pentacalia pachypus* (Greenm) Cuatrec. (*Campiglossa* n. sp. 1 and *Campiglossa* n. sp. 5); *Psacalium peltatum* Cass., (*Campiglossa* n. sp. 1); *Roldana lanicaulis* (Greenm.) H.Rob. & Brettell. (*Campiglossa* n. sp. 17); *Ruilopezia floccosa* (Standl.) Cuatr. (*Campiglossa* n. sp. 5);

Senecio cinerarioides Kunth (*Campiglossa* n. sp. 3 and *Campiglossa* n. sp. 11); *Senecio iodanthus* Greenm. (*Campiglossa* n. sp. 1); *Senecio mairetianus* DC. (*Campiglossa* n. sp. 3 and *Campiglossa* n. sp. 10); *Senecio oerstedianus* Benth. (*C. taenipennis*); *Senecio rudbeckiifolius* Meyen & Walp. (*C. taenipennis*); *Senecio sanguisorbae* DC. (*C. despecta*, *C. luculenta* and *Campiglossa* n. sp. 17); *Senecio vulgaris* L (*Campiglossa* n. sp. 9); *Senecio warszewiczii* A. Braun & Bouché (*Campiglossa* n. sp. 8). Tribe Adenostyleae: *Brickellia grandiflora* (Hook.) (*C. pallidipennis*). Tribe Coreopsidae: *Bidens ostruthioides* (DC.) Sch. Bip (*Campiglossa* n. sp. 1). Tribe Eupatorieae: *Ageratina pringlei* (B.L.Rob. & Greenm.) R.M.King & H.Rob. (*Campiglossa* n. sp. 1 and *Campiglossa* n. sp. 21). Tribe Millerieae: *Sigesbeckia jorullensis* Kunth. (*Campiglossa* n. sp. 21). Tribe Senecioneae: *Barkleyanthus mairetianus* DC (*Campiglossa* n. sp. 17); *Barkleyanthus salicifolius* (Kunth) H.Rob. & Brettell (*C. conspersa*, *C. despecta*, *Campiglossa* n. sp. 1, *Campiglossa* n. sp. 2, *Campiglossa* n. sp. 3, *Campiglossa* n. sp. 4, *Campiglossa* n. sp. 7, and *Campiglossa* n. sp. 10); *Erechtites valerianifolia* (Link ex Wolf) Less. ex DC. (*Campiglossa* n. sp. 7).

***Campiglossa conspersa* (Wulp)**

Figs. 2–4, 56, 79, 103, 127, 151, 179, 207, 235–237

Ensina conspersa Wulp 1900: 417 [description; Mexico]; Hendel 1914: 65 [catalog, in key].
Ensina mediana Wulp 1900: 418 [description; Mexico]; Hendel 1914: 65 [catalog, in key]; Foote 1965: 244 [synonymy].
Paroxyna conspersa: Aczél 1950: 287 [new combination, catalog]; Foote 1965: 243 [type data]; Foote 1967: 34 [catalog].
Paroxyna mediana: Aczél 1950: 288 [new combination, catalog].
Campiglossa conspersa: Norrbom *et al*. 1999: 109 [new combination, catalog].

Diagnosis. This species differs from its neotropical congeners except *C. hyalina* and *C. trinotata* as follows: male wing with broad dark brown area posterior to pterostigma extended distally into cell r_1, and cell r_1 with 3 marginal hyaline spots (central large and 2-3 smaller); and female with 4 marginal hyaline spots (Figs. 2–4). It differs from *C. hyalina* in lacking a preapical hyaline spot in cell r_1 and a large subapical hyaline area in cell r_{2+3} reaching part of r_{4+5}; the lateral surstylus in posterior view lacking a cluster of long setae on each side; and the distiphallus with large conical spines (2 ventrally and 1 laterally). It differs from *C. trinotata* in having 2-3 large marginal hyaline spots in cell r_1 and the distiphallus with 2 large conical

spines, 1 on each lateral side of preglans and male with broad dark brown area posterior to pterostigma, extended apically in cell r_1 with 3 large apical hyaline spots. This species also differs from all of its neotropical congeners except *C. guttularis* in having the fore femur entirely yellow. It differs from *C. guttularis* in having all of the legs yellow; wing with dark brown area posterior to pterostigma with spots in cells r_1 and r_{2+3}. This species differs from all of its neotropical congeners except *C. trinotata* and *Campiglossa* n. sp. 3: aculeus tip with the lateral margin angulate (Fig. 79). It differs from *Campiglossa* n. sp. 3 in having the spermathecae brown, spherical.

Description. Body length 3.63–4.51 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.94–1.04 mm) than long (0.61–0.68 mm), 0.64–0.65 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish. Frons length (0.49–0.53 mm) less than width at vertex (0.53–0.61 mm), slightly narrowed to anterior margin (0.44–0.48 mm). 2 dark brown to black frontal setae, acuminate, equal in size (1 specimen with third seta on 1 side). Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.29–0.34. Eye ovoid, long diameter 0.71–0.77 mm, width 0.49–0.58 mm, ratio 0.69–0.75. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.20–0.23 mm, width 0.15–0.20 mm, ratio 0.86–0.75.

Thorax: Length 1.42–1.62 mm. Ground color dark brown; scutellum brown at base, yellowish apically. Mesonotum grayish microtrichose; scutum usually with 3 yellowish vittae, lateral vitta extended to scutellum. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae); other thoracic setae acuminate, dark brown to black.

Wing: Length 3.70–4.48 mm, width 1.43–1.76 mm. Pattern reticulate. Both sexes with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Male (Fig. 3) with solid brown band between pterostigma and crossvein dm-m. Cell r_1 with 1-4 marginal hyaline spots: proximal 1-2 spots small or absent, rounded, and extended less than half distance to vein R_{2+3}; large, rounded spot approximately midway between apices of veins R_1 and R_{2+3}, extended to or almost to vein R_{2+3}; and small rounded distal spot not reaching vein R_{2+3}

(sometimes absent). Cell r_{2+3} basally entirely brown or with 1-2 small, weak, diffuse hyaline marks, medially usually with anterior hyaline spot obliquely aligned with large spot in r_1, 1-3 small to minute slightly more distal hyaline spots anteriorly or posteriorly, 1 marginal subapical hyaline spot slightly distal to apex of vein R_{2+3} and often 1 small posterior hyaline spot aligned with it. Cell r_{4+5} brown basally, with 2-3 medial hyaline spots, with 2 subapical hyaline spots usually touching veins R_{4+5} or M_1, respectively, and with or without 1 round medial marginal or submarginal hyaline spot not reaching vein R_{4+5} or M_1. Cell m_1 with 3 round marginal hyaline spots and 1-2 anterior spots between proximal 2 marginal spots. Female (Fig. 4) with dark area in pterostigma extended broadly posteriorly into cells r_1 and r_{2+3}, but with rows of hyaline spots along veins R_{2+3} and R_{4+5}, only narrowly connected to quadrate brown mark bordering crossvein r-m. Cell r_1 with 3-4 marginal or submarginal hyaline marks, usually rounded, proximal 1-2 smaller and not extended to vein R_{2+3}; largest spot approximately midway between apices of veins R_1 and R_{2+3}, extended to vein R_{2+3}, and small distal spot not reaching vein R_{2+3}, sometimes partially or entirely fused to medial spot to form large irregular mark. Cell r_{2+3} between base and crossvein r-m with row of 5-6 hyaline spots along vein vein R_{4+5} and 2-3 small anterior spots, with 2-3 large hyaline spots aligned with largest spot in cell r_1, 2 small hyaline spots slightly more distally, and usually with 1 marginal or submarginal hyaline spot close to apex of vein R_{2+3}, and 0-1 posterior subapical spot aligned with marginal spot. Cell br with 5 large hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 4-6 mostly large hyaline spots in basal three-fifths, with 2 subapical spots (aligned with marginal spot in r_{2+3}), 1 usually touching vein R_{4+5} and 1 usually touching vein M_1, and with 0-1 medial submarginal hyaline spot not reaching vein R_{4+5} or M_1. Cell m_1 with 3 marginal hyaline spots and 3 anterior spots. Cell m_4 with 3 marginal hyaline spots.

Legs: Mostly yellow. Fore femur sometimes with faint posterodorsal brown spot. Hind femur with basal two-thirds brown, sometimes entirely yellow in female.

Abdomen: Ground color dark brown with gray microtrichia (Fig. 2); each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, shiny, length 0.89–1.17 mm, oviscape length to thorax length ratio 0.60–0.72; with evenly distributed yellowish to brown setulae. Eversible membrane (Fig. 56) length 0.87–0.90 mm. Aculeus (Fig. 79) pale brown, length 0.75–0.88

mm, in ventral view with basal central area not sclerotized; tip (Fig. 103) elongate triangular, extreme apex slightly broader than preapical width, trilobed, lateral margin with subapical notch. Spermathecae (Fig. 127) brown, elongate ovoid, length 0.16–0.20 mm, surface with papillae.

Male terminalia: Epandrium in posterior view (Fig. 151) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved and with apex bluntly truncate, with setulae evenly distributed, except ventrally; in lateral view (Fig. 179) with dorsal lobe serrated, usually broadest medially. Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial; medial prensiseta on dorsal lobe (Fig. 151). Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus (Fig. 207) with spines on both lateral sides of preglans, on one side with group of 5-6 large spines, on other with 7-8 spines. Glans with acrophallus elongate, length 0.43–0.44 mm, apically with sclerotized tube.

Distribution. Highland areas of central Mexico (Distrito Federal, Mexico, Morelos, Puebla, Veracruz). Elevational records from label data of the examined specimens range from 2200-3900 m.

Biology. This species has been reared from flowerheads and stems of *Barkleyanthus salicifolius* (Kunth) H. Rob. & Brettell.

Type data. *Ensina conspersa* was described from "A single male specimen" from "Mexico, Chilpancingo in Guerrero 4600 feet (H. H. Smith)". The holotype male is labeled "Type" / "B.C.A. Dipt.II *Ensina conspersa*, v.d. W." / "CENT. AMERICA. Pres. By F.D. Godman & O. Salvin. B.M.1903–172." / "Chilpancingo, Guerrero, 4600 ft. June. H.H. Smith" / "*Campiglossa conspersa* (Wulp) S. Lampert & A. L. Norrbom viii.2017" / "NHMUK010862978" (Figs. 235–237). The holotype (examined) is double mounted (minuten), is in good condition, and is deposited in the BMNH.

Ensina mediana was described from "A single male specimen" from "Mexico, Chilpancingo in Guerrero 4600 feet (H. H. Smith)". The holotype was examined by Foote (1965), who considered it conspecific with *conspersa*.

Other Specimens examined: MEXICO. Distrito Federal: Rt. 95 btw. km 42-43, 1 km N La Cima, near train overpass, [19°7'N 99°12'W], on *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1), 8 Aug 1989, A. L. Norrbom, 2m (USNM USNMENT00118884, USNMENT00118903); Rt. 95 btw. km 42-43, near train overpass, sweeping *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett., 8 Aug 1989, A. L. Norrbom, 1m (USNM USNMENT00118813); Rt. 95 btw. km 42-43, near train overpass, reared ex flowers of

Barkleyanthus salicifolius (89M1), 8 Aug 1989, A. L. Norrbom, 8m (USNM/IEXA USNMENT00118779, USNMENT00118781, USNMENT00118783–85, USNMENT00118787–89). **Mexico:** Rt. 890, km 9 area, 6 km W Lago Zempoala, [19°5'N 98°43'W], reared ex flowers of *Barkleyanthus salicifolius* (89M1), 13 Aug 1989, A. L. Norrbom, 1m (USNM USNMENT00118790); Rt. 890, km 9 area, 6 km W Lago Zempoala, [19°5'N 98°43'W], reared ex flowers of *Barkleyanthus salicifolius* (89M1), 13 Aug 1989, A. L. Norrbom, 4m (USNM/IEXA USNMENT00118791–93, USNMENT00118796); Rt 190D (Mexico-Puebla), km 60, 2 km W Rio Frio, 14, sweeping *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1), 14 Aug 1989, A. L. Norrbom, 1m 1f (USNM USNMENT00118806–08); Parque Lag. de Zempoala, [19°5'N 98°43'W], reared ex stems of *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1), 9-11 Aug 1989, A. L. Norrbom, 2m 3f (USNM/IEXA USNMENT00118893–96, USNMENT00118904). **Morelos:** Lago de Zempoala, [19°2'58"N 99°19'3"W], path along Lago Zempoala, on *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1), 10-11 Aug 1989, A. L. Norrbom, 1m (USNM USNMENT00118879); Cuernavaca, [18°55'N 99°15'W], 11 Sep 1944, N. L. H. Krauss, 1m (USNM USNMENT00118906); ridge above Sto. Domingo Ocotitlán, [19°30'N 97°20'W], on *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1), 24 Aug 1989, A. L. Norrbom, 2m (USNM USNMENT00118883, USNMENT00118886); El Vigia & San Felipe Neri, between, on Rt. 142, km 49.5, [19°3'N 98°55'W], 12 Aug 1989, A. L. Norrbom, 1m 4f (USNM/IEXA USNMENT00118878, USNMENT00118888, USNMENT00118901, USNMENT00119001–02). **Puebla:** 2 km E of Puebla-Veracruz border, Rt. 150 (Puebla - Orizaba), km 229, [18°52'N 97°20'W], on *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1), 14 Aug 1989, A. L. Norrbom, 3f (USNM/IEXA USNMENT00118897–99). **Veracruz:** Rt. 140 (Xalapa - Perote) 3 km NW Acajete, [19°2'N 99°16'W], 2200 m, 18 Aug 1989, A. L. Norrbom, 7m 4f (USNM USNMENT00118361–62, USNMENT00118880–82, USNMENT00118885, USNMENT00118887, USNMENT00118889–92); Estación Microondas Las Lajas, km16, [19°35'N 97°05'W], 3100 m, sweeping *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1), 19 Aug 1989, A. L. Norrbom, 1m (USNM USNMENT00118905).

***Campiglossa despecta* (Wulp)**

Figs. 5–6, 57, 80, 104, 128, 152, 180, 208, 238–240

Ensina despecta Wulp 1900: 418 [description, Guerrero, Mexico]; Hendel 1914: 65 [catalog, in key].
Paroxyna despecta: Aczel 1950: 287 [new combination, catalog]; Foote 1965: 243 [type data]; Foote 1967: 34 [catalog].
Campiglossa despecta: Norrbom *et al*. 1999: 109 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners in having the distiphallus with 2 rows of spines, long, strong and similar in size, on both sides of the preglans (Fig. 208). The distribution of spines of the distiphallus is similar in *Campiglossa* n. sp. 8 and *Campiglossa* n. sp. 20, but the spines in the last two species differ in size, gradually decreasing basally (Figs. 221, 233). This species differs from all of its neotropical congeners except *C. luculenta*, *C. taenipennis*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 9 and *Campiglossa* n. sp. 17 in having the spermathecae elongated. It differs from *C. luculenta* in having the distiphallus with 2 large conical spines on both lateral sides of the preglans (Fig. 210). It differs from *C. taenipennis* in having the distiphallus with spines on both lateral sides of the preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 9 in having abdomen black, bright; tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black. It differs from *Campiglossa* n. sp. 17 in having distiphallus with 2 cluster of 7-8 spines each sides of preglans (Fig. 230).

Description. Body length 2.85–4.00 mm, dark brown in ground color, mostly silver microtrichose. Setae dark brown to black.

Head: Slightly higher (0.78–0.85 mm) than long (0.52–0.56 mm), 0.65–66 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput brown to black medially and dorsally (sometimes reaching ocellar tubercle), parafacial whitish. Frons length (0.40–0.42 mm) less than width at vertex (0.49–0.52mm), slightly narrowed to anterior margin (0.37–0.42 mm). 2 frontal setae, acuminate, equal in size, dark brown to black (1 specimen with third setae on 1 side). Anterior orbital seta acuminate, posterior seta smaller, white and

lanceolate. Gena with few small lanceolate, white to yellow setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.15–0.18. Eye ovoid, long diameter 0.64–0.68 mm, width 0.48–0.51 mm, ratio 0.75. Antenna testaceous yellow to brown, first flagellomere longer than wide, long diameter 0.17–0.18 mm, width 0.11–0.14 mm, ratio 0.64–0.72.

Thorax: Length 1.20–1.44 mm. Ground color dark brown; scutum usually with 3 yellowish vittae, lateral vitta extended to scutellum; scutellum brown at base, yellowish apically. Mesonotum entirely silvery microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size previously and posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta more than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.20–3.95 mm, width 1.27–1.62 mm. Pattern reticulate (Figs. 5–6). Both sexes with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots in male, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m (Figs. 5–6). Cell r_1 with proximal area hyaline; female with 0-3 rounded, small spots extended to half basal and 3 marginal hyaline spots in the apical half. Cell r_{2+3} with 3-4 small basal marks, medially usually with 2 large hyaline spots obliquely aligned with large spot in r_1, 0-3 posterior hyaline spots and 2 marginal hyaline spots connected or semi-connected. Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} usually with a large basal hyaline spot, usually touching vein R_{4+5}, 4-7 small hyaline spots between vein R_{4+5} and M_1, 2 subapical spots, one touch vein R_{4+5} e other touch vein M_1 and with 1 medial submarginal hyaline spot not reaching vein R_{4+5} or M_1. Cell dm hyaline basally and 6 apical spots. Cell m_1 with 3 marginal hyaline spots and 1 large anterior spot. Cell m_4 with 3 marginal hyaline spots.

Legs: Mostly yellow. Fore femur and hind femur usually with two-third basal brown spot. Hind femur with basal two-thirds brown and middle femur sometimes entirely yellow in female.

Abdomen: Ground color dark brown with microtrichia and setulae on terga concolorous with those on mesonotum. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Syntergite 1+2 with small setulae on anterior margin, centrally

bare, and uniformly setulose on posterior half. Tergites 3–6 uniformly setulose, posterior margins with row of sparse lanceolate, white to yellow setae. Female tergite 6 and male 5 with row of large acuminate, pale brown setae (higher in females). Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape brown to dark brown, bright, length 0.86–0.88 mm, oviscape length to thorax length ratio 0.61–0.62; with evenly distributed yellowish to brown setulae. Eversible membrane (Fig. 57) length 0.81–0.82 mm. Aculeus (Fig. 80) pale brown, length 0.77–0.80 mm, in ventral view with tip pointed (Fig. 80). Spermathecae brown, elongate, length 0.20–0.21 mm, surface with papillae (Fig. 128).

Male terminalia: Epandrium in posterior view (Fig. 152) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved, straight or directed slightly ventrally, with distributed setulae, except in lateral, ventral and apex (Fig. 152); in lateral view with serrated dorsal lobe uniformly (Fig. 180). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial, prensiseta medial with dorsal margin inserted in surstylo (Fig. 152). Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, on one side a group of 17 large spines, on other with 15 large spines (Fig. 208). Glans with acrophallus elongate, length 0.32–0.34 mm, apically with sclerotized tube.

Distribution. Highland areas of central Mexico (Distrito Federal, Mexico, Veracruz). Elevational records from label data of the examined specimens range from 2700-3900 m.

Biology. This species has been reared from flowerheads of *Barkleyanthus salicifolius* (Kunth) H. Robins. & Brett. and *Senecio sanguisorbae* DC.

Type data. This species was described from "a single female specimen" from "Mexico, Xucumanatlan in Guerrero 7000 feet (H. H. Smith)". The holotype female is labeled "Type" / "B.C.A Dipt.II *Ensina despecta*, v.d.W." / "CENT. AMERICA. Pres. by F.D. Godman & O. Salvin. B.M. 1903-172." / "Xucumanatlan, Guerrero, 7000 ft. July. H.H. Smith." / "*Campiglossa despecta* (Wulp) S. Lampert & A. L. Norrbom viii.2017" / "NHMUK 010862980" (Figs.238–240). The holotype (examined) is double mounted (minuten), is in good condition, and is deposited in the BMNH.

Other Specimens examined: MEXICO: Distrito Federal: Rt. 95 btw. km 42 - 43, near train overpass, reared ex flowers of *Senecio sanguisorbae* DC. (89M3) [Asteraceae], 8 Aug 1989, A. L. Norrbom, 4m 5f 6p (USNM/IEXA USNMENT00118386, USNMENT00118773, USNMENT00118775, USNMENT00118776–77, USNMENT00118816–20). **México:** Rt.

890, km 9 area, 6 km W Lago Zempoala, 19°5'N 98°43'W, reared ex flowers of *Barkleyanthus salicifolius* (H (. B. K.) H. Robins. & Brett. (89M1) [Asteraceae], 13 Aug 1989, A. L. Norrbom, 3m (USNM/IEXA USNMENT00118380, USNMENT00118382, USNMENT00118774); Parque Lag. de Zempoala, 19°5'N 98°43'W, reared ex flowers of *Senecio sanguisorbae* DC. (89M9) [Asteraceae], 9-11 Aug 1989, A. L. Norrbom, 2m 1p (USNM/IEXA USNMENT00118822–23); Parque Popo - Izta, Rt 451 (Amecameca - Cholula), on undetermined *Cirsium* sp. [Asteraceae], 13 Aug 1989, A. L. Norrbom, 1f (USNM USNMENT00118821); Parque Popo - Izta, Rt 451 (Amecameca - Cholula), 3900 m, reared ex flowers of *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1) [Asteraceae], 13 Aug 1989, A. L. Norrbom, 3f (USNM/IEXA USNMENT00118824–26). **Veracruz:** road to Estación Microondas Las Lajas from Las Vigas de Ramirez, km 14-16, 19°35'N 97°5'W, 2700-3000 m, 19 Aug 1989, A. L. Norrbom & J. Valenzuela, 1m 3f (USNM/IEXA USNMENT00118389, USNMENT00118778, USNMENT00118814–15).

***Campiglossa guttularis* (Wulp)**

Figs. 241–243

Ensina guttularis Wulp 1900: 418 [description, Guerrero, Mexico]; Hendel 1914: 65 [catalog, in key].
Paroxyna guttularis: Aczél 1950: 288 [new combination, catalog]; Foote 1965: 244 [lectotype designation]; Foote 1967: 35 [catalog].
Campiglossa guttularis: Norrbom *et al*. 1999: 114 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners by having the abdomen with a whitish band on the posterior margin of all tergites. It also differs from all of its neotropical congeners except *C. pallidipennis* in having the legs entirely yellow (Fig. 241). It differs from *C. pallidipennis* in having wing with pattern hyaline to light brown and area between cell r_1 to crossvein dm-m without hyaline spots (Figs. 11–12).

Description. Body length 3.87 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.92 mm) than long (0.67 mm), 0.72 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish. Frons length (0.49 mm) less than width at vertex (0.53 mm), slightly

narrowed to anterior margin (0.44 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin. Eye ovoid, long diameter 0.66 mm, width 0.49 mm, ratio 0.74. Antenna yellow; first flagellomere longer than wide.

Thorax: Length 1.42 mm. Ground color dark brown (Figs. 241–242).; scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.33 mm, width 1.25 mm. Pattern reticulate (Fig. 241). Basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 and r_{2+3} with hyaline spots. Pterostigmal brown area not extending into cell r_1 along costa. Cell r_1 with 3 large marginal hyaline spots. Cell r_{2+3} medially usually with 2 large hyaline spots obliquely aligned with proximal 2 large spots in r_1 and 2 marginal hyaline spots. Cell br with 3 large hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 2-5 hyaline spots subbasally, sometimes diffuse and/or fused into large irregular mark, 2 large preapical spots aligned with marginal spot in r_{2+3}, and with 1 medial submarginal hyaline spot not reaching vein R_{4+5} or M_1. Cell dm with 2 large hyaline spots on basal third and 2 subapical hyaline spots. Cell m_1 with 3 marginal or submarginal hyaline spots, and 2 anterior spots. Cell m_4 with 5-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Entirely yellow (Fig. 241).

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, female tergite 6 with row of large acuminate, pale brown setae (Figs. 241–242).

Female terminalia: Oviscape dark brown, bright, length 0.70 mm.

Distribution. Highland central Mexico (Guerrero). The only elevational records, from the series, are 1402 m (4600 ft.) and 2134 m (7000 ft.), although the latter record could be erroneous.

Biology. No host plant information is known for this species.

Type data. This species was described from “Three female specimens” from “Mexico,

Chilpancingo 4600 feet, and Xucumanatlan 7000 feet, both in Guerrero (H. H. Smith)", but Foote (1965) reported only three females from Chilpancingo, one of which he designated as lectotype, and "found no specimens from Xucumanatlán". It is unclear whether Wulp erred in reporting the Xucumanatlán female or if the specimen was lost. The lectotype female is labeled "Co-type" / "B.C.A Dipt.II *Ensina guttularis*, v.d.W." / "CENT. AMERICA. Pres. by F.D.Godman & O.Salvin. B.M. 1903-172." / "Chilpancingo, Guerrero, 4600 ft. June. H.H. Smith." / This specimen to be lectotype RHJ" / "*Campiglossa guttularis* (Wulp) S. Lampert & A. L. Norrbom viii.2017" / "NHMUK 010862983" (Fig. 243). The lectotype (examined) is double mounted (minuten), is in good condition, and is deposited in the BMNH.

***Campiglossa hyalina* (Foote)**

Figs. 7–8, 58, 81, 105, 129, 153, 181, 219, 244–246

Gonioxyna hyalina Foote 1979: 167 [description, Chiapas, Mexico].
Campiglossa hyalina: Norrbom *et al*. 1999: 114 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners except *C. conspersa* and *C. trinotata* as follows: male with broad dark brown area posterior to pterostigma extended apically into cell r_1 (Fig. 7). It differs from *C. conspersa* in that the male has only 1 apical marginal hyaline spot in cell r_1 versus 2-3 more proximal marginal spots in *C. conspersa* . It differs from *C. trinotata* in having 2-3 large apical hyaline spots in cell r_1. This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 12 in having the lateral surstylus with dense posterodorsal cluster of setae (Fig. 153). It differs from *Campiglossa* n. sp.12 in having the lateral surstylus with serrated dorsal lobe, distinct alongated; male with wing all hyaline reticulate with large spots; distiphallus with 6 large conical spines (Fig. 225).

Description. Body length 3.16–3.43 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.68–0.74 mm) than long (0.45–0.52 mm), 0.66–0.70 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.35–0.37 mm) less than width at vertex (0.45–0.47 mm), slightly narrowed to anterior margin (0.32–0.35 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate,

reclinate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.22–0.23. Eye ovoid, long diameter 0.56–0.57 mm, width 0.40–0.47 mm, ratio 0.71–0.82. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.18–0.19 mm, width 0.11–0.13 mm, ratio 0.61–0.68.

Thorax: Length 1.08–1.17 mm. Ground color dark brown; scutellum brown. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 2.93–3.06 mm, width 1.22–1.25 mm. Pattern reticulate. Both sexes (Figs. 7–8) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigmal brown area extending into cell r_1 along costa. Male (Fig. 7) with pterostigma all brown, with broad dark band between pterostigma, apex cell r_1 and crossvein dm-m. Cell r_1 with one-third basal hyaline and apical hyaline spot. Cell r_{2+3} with area basal hyaline, 2 hyaline spots medially, with a large subapical hyaline area touching veins R_{2+3} and R_{4+5}, and 1 apical marginal hyaline spot. Cell br with 3-4 large hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} with 1 hyaline spot distal to crossvein dm-m and 1 hyaline spot near anterior end of crossvein dm-m equal than half width of cell r_{4+5}; 3-4 hyaline spots subbasally, anterior spot 3 times more longer than wide and 1 apical hyaline spot between vein R_{4+5} and M_1. Cell m_1 with 3 marginal hyaline spots, with 1 large anterior spot. Cell m_4 with 3 marginal hyaline spots, the least, touching vein M_4. Female (Fig. 8) with pterostigma brown with large subapical orange spot (1 specimen with two spots), with broad dark area near pterostigma reaching the r-m and two-third r_1. Cell r_1 with one-third basal hyaline, with 2 subapical marginal hyaline spots both reaching the vein C and R_{2+3}, and 3-4 small anterior spots. Cell r_{2+3} with area basal hyaline, 5-6 hyaline spots medially, with a large subapical hyaline area touching veins R_{2+3} and R_{4+5}. Cell br with 2-3 large hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} with 1 large hyaline spot distal to crossvein dm-m and 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}; 3-4 hyaline spots subbasally, anterior spot 3 times more longer than wide and apical hyaline spot between vein R_{4+5} and M_1. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 4-5 anterior spots and 3 marginal hyaline spots, the least, touching vein M_4.

Legs: Mostly yellow. Fore femur sometimes with faint posterodorsal brown spot. Hind

femur with brown to black except extreme apex area, sometimes middle femur entirely yellow.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 0.91–1.17 mm, oviscape length to thorax length ratio 0.82–0.93; with evenly distributed acuminate brown setulae. Eversible membrane (Fig. 58) length 0.90–1.03 mm. Aculeus (Fig. 81) all pale brown, length 0.88 mm, in ventral view with tip rounded (Fig. 105). Spermathecae brown, subspherical, length 0.11–0.14 mm, surface with papillae (Fig. 129).

Male terminalia: Epandrium in posterior view (Fig. 153) inverted U-shaped, with setulae and microtrichia distributed evenly. Ventrally with a cluster of setae on each side. Lateral surstylus in posterior view medially curved, with apex truncate, setulose except apically (Figs. xx), in lateral view with dorsal lobe serrated. Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 153); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with 2 spines ventrally and 1 laterally (Fig. 209). Glans with acrophallus, length 0.33 mm.

Distribution. Highland areas of Guatemala (Huehuetenango) and southern Mexico (Chiapas). Elevational records from label data of the examined specimens range from 1800-3183 m.

Biology. This species has been collected on a "short leaf *Baccharis* sp." but has not been reared.

Type data. The holotype male is labeled "MEX Chis. 9600ft. Zontehuitz, nr. S[an]. Cristobal de las Casas]. 17 May 1969 W. R. M. Mason" / "USNM Type No" / "*Gonioxyna hyalina* Foote d.RHFoote '7" / "HOLOTYPE *Gonioxyna hyalina* Foote CNC No." / "*Campiglossa hyalina* (Foote) S. Lampert & A. L. Norrbom VIII.2017" (Figs. 244–246). The holotype is glued to the pin, is in excellent condition, and is deposited in the CNC.

Specimens examined. GUATEMALA: Huehuetenango: Buena Vista Chiantla, hill with antennas, 15.36962°N 91.44349°W, 2485 m, on short leaf *Baccharis* sp., 25 Nov 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, F. Camposeco, 1m 1f (USNM USNMENT00104363–64); Sierra de los Cuchumatanes, glaciated area near Xemal, 15.4409°N 91.46945°W, 3183 m, on short leaf *Baccharis* sp., 25 Nov 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, F. Camposeco,

1f (USNM USNMENT00104362). **MEXICO: Chiapas:** Mt. Tzontehuitz, 9500’ [2896 m], 27 May 1969, H. J. Teskey, 1m paratype (USNM); Mt. Tzontehuitz, 9400’ [2866 m], 19.3 km NE San Cristobal 17.V.1969, 17 May 1969, B. V. Peterson, 1f (USNM USNMENT00119095); Union Juarez, s slope volcan Tacaná, Chiquihuites, 15°5'N 92°6'W, 1800-2000 m, 2-5 Nov 1994, A. L. Norrbom, L. E. Carroll & C. Estrada, 1f (USNM USNMENT00118659).

***Campiglossa luculenta* (Wulp)**
Figs. 9–10, 59, 82, 106, 130, 154, 182, 210, 247–249

Ensina luculenta Wulp 1900: 417 [description, Guerrero, Mexico]; Hendel 1914: 65 [catalog, in key].
Paroxyna luculenta: Aczél 1950: 288 [new combination, catalog]; Foote 1965: 243 [type data]; Foote 1967: 35 [catalog].
Campiglossa luculenta: Norrbom *et al*. 1999: 114 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners in having the distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It also differs from all of its neotropical congeners except *Campiglossa* n. sp. 18 and *Campiglossa* n. sp. 19 as follows: male with 1 elongated preapical hyaline spot in cell r_{4+5} (Fig. 9). It differs from *Campiglossa* n. sp. 18 in having the distiphallus with spines on both lateral sides of the preglans, on one side with 1 large spine, on other with 2 large spines (Fig. 231). It differs from *Campiglossa* n. sp. 19 in having the distiphallus with 4-5 large spines on both lateral sides of the preglans (Fig. 232).

Description. Body length 3.00–4.75 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.74–0.95 mm) than long (0.51–0.59 mm), 0.62–0.68 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish, sometimes extends to orbital setae. Frons length (0.41–0.51 mm) less than width at vertex (0.48–0.60 mm), slightly narrowed to anterior margin (0.37–0.46 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.20–0.23. Eye ovoid, long diameter 0.60–0.75 mm, width 0.42–0.52 mm, ratio

0.69–0.70. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.17–0.24 mm, width 0.14–0.17 mm, ratio 0.71–0.82.

Thorax: Length 1.16–1.60 mm. Ground color dark brown; scutellum brown. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half or half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.10–3.76 mm, width 1.29–1.62 mm. Pattern reticulate. Both sexes (Figs. 9–10) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 with a few hyaline spots, in cell r_{2+3} with hyaline spots, hyaline spot near anterior end of crossvein r-m not crossing cell. Crossveins r-m and dm-m in both sides with laterally dark brown area. Cell r_1 with 3 large marginal hyaline spots which touch the veins C and R_{2+3} (sometimes, first spot in shape inverted cone and not touch the vein R_{2+3}). Cell r_{2+3} with 2-3 small, weak, diffuse hyaline basal marks, medially usually with 2 large hyaline spots obliquely aligned with large spot in r_1, usually with 1 marginal hyaline spot and 1 submarginal hyaline spot, closer to vein R_{4+5} than to apex of R_{4+5} (sometimes united). Cell br with 2-3 hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} usually with a large preapical hyaline area (sometimes with only one hyaline spot rounded) and 6-10 anterior small hyaline spots and sometimes diffuse (sometimes with 2 large basal). Cell m_1 with 3 marginal or submarginal hyaline spots and 1-2 large anterior spots. Cell m_4 with 4-6 anterior spots and with 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 1.12–1.16 mm, oviscape length to thorax length ratio 0.72–0.80; with evenly distributed brown setulae. Eversible membrane (Fig. 59) length 1.00–1.10 mm. Aculeus (Fig. 82) pale brown, length 1.00–1.07 mm, in

ventral view with tip pointed (Fig. 106). Spermathecae brown, elongated, length 0.15–0.19 mm, surface with papillae (Fig. 130).

Male terminalia: Epandrium in posterior view (Fig. 154) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view strongly medially curved, setulose except apically (Figs. 182), in lateral view with dorsal lobe serrated. Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 154); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, 2 large spines each side (Fig. 210). Glans with acrophallus medium, length 0.32–0.34 mm.

Distribution. Highland areas of Costa Rica (San José), southern Mexico (Chiapas), and western Venezuela (Mérida). Elevational records from label data of the examined specimens range from 2700-3200 m.

Biology. This species has been reared from flowerheads of *Conyza uliginosa* (Benth.) Cuatr., *Oritrophilum nevadense* (H.B.K.) Cuatr., and *Noticastrum marginatum* (H.B.K.) Cuatr.

Type data. This species was described from "a single male specimen" from "Mexico, Omilteme in Guerrero 8000 feet (H. H. Smith)". The holotype male is labeled "Type" / "B.C.A Dipt.II *Ensina luculenta*, v.d. W." / "CENT. AMERICA. Pres. By F.D. Godman & O. Salvin. B.M. 1903-172." / "Omilteme, Guerrero, 8000 ft. July. H.H. Smith." / "*Campiglossa luculenta* (Wulp) S. Lampert & A. L. Norrbom VIII. 2017" / "NHMUK010862984" (Figs. 247–249). The holotype is double mounted (minuten), is in good condition, but with only one wing, and is deposited in the BMNH.

Other Specimens examined: COSTA RICA: San José: Reserva Forestal Los Santos, Cerro Estaquero, km 94, 9°36.25' 83°46.04', LS, 3200 m, 20 May 1997, A. L. Norrbom, 1m (USNM USNMENT00050156). **MEXICO: Chiapas:** Union Juarez, s slope volcan Tacaná, Chiquihuites, 15°5'N 92°6'W, 2700 m, 17 Nov 1994, A. L. Norrbom, L. E. Carroll & C. Estrada, 1f (USNM USNMENT00118658). **VENEZUELA: Mérida:** Páramo Mucubají, Lag. Negra, 28-31 Oct 1989, A. L. Norrbom, *Noticastrum marginatum* (H.B.K) Cuatr., 1m 1f (USNM USNMENT00119084, USNMENT00118682); Mérida: Páramo Mucubají, Lag. Negra, 28-31 Oct 1989, A. L. Norrbom, *Conyza uliginosa* (Benth) Cuatr., 2m 1f (USNM USNMENT00118690, USNMENT00118668, USNMENT00119086); Mérida: Páramo Mucubají, Lag. Negra, 28-31 Oct 1989, A. L. Norrbom, *Oritrophilum nevadense* (H.B.K) Cuatr. 1m 2f (USNM USNMENT00118684, USNMENT01355000, USNMENT00118676).

***Campiglossa pallidipennis* (Cresson)**

Figs. 11–12, 60, 83, 107, 131, 155, 183, 211

Tephritis pallidipennis Cresson 1907: 104 [description, Colorado, USA]; Novak 1974: 33 [lectotype designation].
Paroxyna pallidipennis: Quisenberry 1951: 59 [new combination]; Foote 1965b: 666 [catalog]; Novak 1974: 33 [revision, lectotype designation]; Foote *et al*. 1993: 295 [identification, distribution]; Goeden 1994: 283 [host plant].
Campiglossa pallidipennis: Norrbom *et al*. 1999: 113 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners by having the wing pattern mostly pale brown or gray (Figs. 11–12); thorax with microtrichia entirely yellow to golden; and the preglans with 2 large spines in both sides of the distiphallus (Fig. 211). It differs from all of its neotropical congeners except *Campiglossa* sp. 15 in having the area of the male wing from cell r_1 to crossvein dm-m without hyaline rounded spots (Fig. 11). It differs from *Campiglossa* sp. 15 in having faint hyaline marks between the pterostigma and crossvein r-m and apical cell r_{4+5} (Fig. 44).

Description. Body length 3.30–4.38 mm, dark brown in ground color, gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.90–1.06 mm) than long (0.59–0.66 mm), 0.62–0.65 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput brown to black medially, dorsally and ventrally (sometimes reaching ocellar tubercle); face and parafacial whitish, subvibrissal setulae white to yellow. Frons length (0.45–0.47 mm) less than width at vertex (0.59–0.66 mm), slightly narrowed to anterior margin (0.42–0.52 mm). 2 frontal setae, acuminate, equal in size, dark brown to black (1 specimen with third setae on both of sides and 1 specimen with 1 setae on 1 side). Setae orbital convergent, anterior acuminate and posterior seta smaller, white and lanceolate or acuminate. Gena with few small lanceolate, white to yellow on dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.18–0.25. Eye ovoid, long diameter 0.68–0.81 mm, width 0.45–0.54 mm, ratio 0.66. Antenna testaceous yellow to brown, first flagellomere with rounded tip, longer than wide, long diameter 0.18–0.23 mm, width 0.13–0.17 mm, ratio 0.72–0.73.

Thorax: Length 1.27–1.59 mm. Ground color dark brown; scutum gray microtrichose in

anterior margin and golden microtrichose the posterior margin and scutellum. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.33–4.40 mm, width 1.38–1.65 mm. Pattern hyaline to light brown (Figs. 11–12). Both sexes with reticulate cells from br and dm to m_4. Pterostigma brown with subapical marginal orange spot (sometimes absent or a small, weak mark). Cell br with few small hyaline spots distal to crossvein bm-m, less than half width of cell br. Cell r_{4+5} without apical hyaline spot between vein R_{4+5} and M_1. Cell m_1 with 3 marginal or submarginal hyaline spots and 2-3 anterior spots. Cell m_4 with basal area reticulate and 2-3 marginal or submarginal hyaline spots. Male (Fig. 11) with broad dark band light brown to hyaline between cell r_1 (aligned with apical cell pterostigma) to crossvein r-m and preapical cell r_1 to preapical cell r_{4+5}. Female (Fig. 12) cells r_1, r_{2+3} and r_{4+5} with reticulate pattern (sometimes the cell r_{2+3} with basal half reticulate and 1-2 spots in subapical or apical area touching vein R_{2+3}.

Legs: Mostly yellow. Sometimes with small dark brown spots on femora.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape brown, length 1.27–1.58 mm, oviscape length to thorax length ratio 0.77–0.92; with evenly distributed brown setulae. Eversible membrane (Fig. 60) length 1.40–1.44 mm. Aculeus (Fig. 82) pale brown to brown, length 1.19–1.22 mm, in ventral view with tip pointed (Fig. 107). Spermathecae brown to black, ovoid, length 0.13–0.18 mm, surface with papillae (Fig. 131).

Male terminalia: Epandrium in posterior view (Fig. 155) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved and with the apex converging inside, with distributed setulae, except apically (Fig. 183), in lateral view with large dorsal lobe undulated. Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 155) medial prensiseta on dorsal lobe. Proctiger elongate, with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with 2 large spines on both lateral sides of preglans (Fig. 211). Glans with acrophallus medium, length 0.34–0.40 mm.

Distribution. Highland areas of central and northern Mexico (Hidalgo, Mexico, Nuevo León) and the southwestern United States (Arizona, California, Colorado, New Mexico, Utah). Elevational records for examined specimens from Mexico range from 2713-3140 m.
Biology. This species has been reared from flowerheads of *Brickellia grandiflora* (Hook.) Nutt. (Goeden 1994).
Type data. USA. Colorado: Mainton [error, Manitou], 6029 ft. (E. S. Tucker), Lectotype male (not examined), designated by Novak (1974), is deposited in the Academy of Natural Sciences, Philadelphia.
Specimens examined. MEXICO. Hidalgo: Cerro Pelado, N.L. Mex., 9700-10300' [2957-3140 m], 15-16 Jul 1963, H. & A. Howden, 1m 3f (CNC USNMENT01355066–67, USNMENT01232038–39) 1f (USNM); **México:** Toluca, 16 km E, 2713 m, 31 Aug 1954, J. G. Chillcott, 1f. **Nuevo León:** Cerro Potosi NW 18 de Marzo, 3000 m, 27 Jun 1986, M. Sörensson & B. Mårtensson, 1m 2f (ZIL USNMENT01232035–37).

***Campiglossa taenipennis* (Hering)**
Figs. 1, 13–14, 61, 84, 108, 132, 156, 184, 212, 250–252

Paroxyna taenipennis Hering 1941: 162 [description, Cuzco, Peru]; Aczél 1950: 290 [catalog]; Foote 1967: 35 [catalog].
Campiglossa taenipennis: Norrbom *et al*. 1999: 114 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners in having distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines, glans with acrophallus elongate (length 0.40–0.42 mm) (Fig. 212) and aculeus all yellowish (Fig. 84). This species differs from all of its neotropical congeners except *C. despecta*, *C. luculenta*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 9, and *Campiglossa* n. sp. 17 in having the spermathecae elongated (Fig. 132). It differs from *C. despecta* in having distiphallus with 2 rows of spines, long, strong and same size, in both sides of preglans (Fig. 208). It differs from *C. luculenta* in having distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 9 in having abdomen black, bright; tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black. It differs from

Campiglossa n. sp. 17 in having distiphallus with 2 clusters of 7-8 spines on each side of preglans (Fig. 230).

Description. Body length 3.18–4.38 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.86–0.88 mm) than long (0.54–0.62 mm), 0.62–0.70 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.41–0.48 mm) less than width at vertex (0.51–0.56 mm), slightly narrowed to anterior margin (0.44–0.48 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.22–0.24. Eye ovoid, long diameter 0.65–0.71 mm, width 0.48–0.54 mm, ratio 0.74–0.76. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.19–0.21 mm, width 0.15–0.17 mm, ratio 0.71–0.89.

Thorax: Length 1.26–1.53 mm. Ground color dark brown; scutum usually with 5 yellowish vittae, sublateral vitta extended to scutellum; scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.35–4.25 mm, width 1.25–1.65 mm. Pattern reticulate. Both sexes (Figs. 13–14) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. (Figs. 13–14). Cell r_1 with 3 large marginal hyaline spots. Cell r_{2+3} with basal third brown, medially usually with 2 large hyaline spots obliquely aligned with proximal 2 large spots in cell r_1, 2-4 minute preapical hyaline spots and 2 marginal hyaline spots, anterior touching vein R_{2+3} and posterior touching vein R_{4+5}. Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of

crossvein dm-m more than half width of cell r_{4+5}, with 3-4 hyaline spots subbasally, sometimes diffuse and/or fused into large irregular mark, 2 preapical spots aligned with anterior marginal spot in cell r_{2+3}, and 1 large marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 3-6 preapical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 5-7 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 1.13–1.16 mm, oviscape length to thorax length ratio 0.79–0.80; with evenly distributed acuminate brown setulae. Eversible membrane (Fig. 61) length 0.97–0.99 mm. Aculeus (Fig. 84) all yellowish, length 0.90–0.97 mm, in ventral view with tip rounded (Fig. 108). Spermathecae brown, elongated, length 0.18–0.20 mm, surface with papillae (Fig. 132).

Male terminalia: Epandrium in posterior view (Fig. 156) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically, in lateral view with dorsal lobe sharply serrate, margin usually with strong medial gap in serrations (Fig. 184). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 156); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212). Glans with acrophallus elongate, length 0.40–0.42 mm, apically with sclerotized tube.

Distribution. Highland areas of Costa Rica (Cartago, San José) and Peru (Cuzco). Elevational records from label data of examined specimens range from 3000-3108 m.

Biology. This species has been reared from flowerheads of *Senecio oerstedianus* Benth., *Senecio rudbeckiifolius* Meyen & Walp, and *Jessea megaphylla* (Greenm.) H. Rob. & Cuatrec.

Type data. The holotype male is labeled “Type” / “Peru 20.7.03 Cuzco” / “Coll. W. Schnuse 1911-3 [green label]” / “n. sp.” / “*Paroxyna taenipennis* ♂ m. Type det. M. Hering 1940” /

"Holotype det. Norrbom 199" / "Staatl. Museum für Tierkunde Dresden Coll. W. SCHNUSE, 1911". (Figs. 250–252) The holotype (examined) is double mounted (minuten), is in good condition, and is deposited in the SMT.

Other Specimens examined: COSTA RICA: Cartago: Villa Mills, 9°34'N 83°44'W, 3000 m, 05 Aug 1989, 1m (USNM USNMENT00118845). **San José:** 16 km SE Empalme, Rt. 2 (PanAm Hwy.), km 67, near Trinidad, 9°40'N 83°53'W, reared ex *Jessea megaphylla* (Greenm.) H. Rob. & Cuatrec. (92CR17) [Asteraceae], 7 Nov 1992, A.L. Norrbom & G.J. Steck, 1f 1p (USNM USNMENT00119051); PamAm Hwy, km 89, Cerro de La Muerte, Las Torres 9°34'N 83°44'W, 6 Aug 1995, A.L. Norrbom, reared ex flowers *Senecio oerstedianus* Benth. 2m 2f (USNMENT00048139–41, USNMENT00048143). **PERU: Cusco:** Carretera Manu, SE of Paucartambo, WP 550, 13.34376°S 71.57799°W, 3108 m, emerged 13-30 Dec 2011 reared ex flowerheads of *Senecio rudbeckiifolius* Meyen & Walp. (11-PE-23), collected 12 Dec 2011, Norrbom, Steck, Sutton & Nolazco, 3m 3f (USNM/MHNJP USNMENT00119284–85, USNMENT00119291, USNMENT01355004, USNMENT01232012, USNMENT00120071).

***Campiglossa trinotata* (Foote)**

Figs. 15–16, 62, 82, 110, 134, 158, 187, 216, 253–255

Gonioxyna trinotata Foote 1979: 168 [description, Guatemala].
Campiglossa trinotata: Norrbom *et al*. 1999: 114 [new combination, catalog].

Diagnosis. This species differ from all of its congeners except *C. conspersa* and *C. hyalina* in having male with broad dark brown area posterior pterostigma, extended apically in cell r_1 with 3 apical spots (Figs. 15–16). It differs from *C. conspersa* in having area in wing with broad dark brown area posterior to pterostigma, extended apically in cell r_1; male with 3 apical spots in cell r_1 (central large and 2 laterally smaller) (Fig. 3). It differs from *C. hyaline* with 1 apical spot in cell r_1. This species differs from all of its neotropical congeners except *C. pallidipennis* and *Campiglossa* n. sp.15 in having posterior orbital seta inclinate. It differs *C. pallidipennis* in having pattern hyaline to light brown; thorax with microtrichia entirely yellow to golden. It differs from *Campiglossa* n. sp.15 in having wing with pattern hyaline light brown; apical half predominantly darkened from pterostigma to apical cell r_{4+5}, without rounded spots (Fig. 44). This species differs from all of its neotropical congeners except *C. conspersa* and *Campiglossa* n. sp. 3 in having the aculeus tip with lateral margin angulate

(Fig. 109). It differs from *Campiglossa* n. sp. 3 in having spermathecae brown, spherical (Fig. 136).

Description. Body length 2.31–3.00 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.70–0.71 mm) than long (0.46–0.48 mm), 0.66–0.68 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle; face and parafacial whitish. Frons length (0.34–0.36 mm) less than width at vertex (0.42 mm), slightly narrowed to anterior margin (0.32–0.34 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, inclinate. Gena with few small brown, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.18–0.25. Eye ovoid, long diameter 0.44–0.59 mm, width 0.42–0.42 mm, ratio 0.71–0.95. Antenna testaceous yellow to brown, first flagellomere with rounded tip, longer than wide, long diameter 0.15–0.17 mm, width 0.11–0.13 mm, ratio 0.73–0.76.

Thorax: Length 0.95–1.16 mm. Ground color dark brown; scutum usually with 4 yellowish to brown vittae, medial vitta extended to scutellum; scutellum brown. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 2.81–2.87 mm, width 1.13–1.09 mm. Pattern reticulate. Both sexes (Figs. 15–16) with basal half predominantly hyaline reticulate from cells bc and c to preapical dm and M_4. Pterostigma brown with subapical marginal orange spot in females, males with pterostigma all brown (Fig. 15). Pterostigmal brown area extending into cell r_1 along costa. Broad dark band between pterostigma and cell br. Crossveins r-m and dm-m in both sides with laterally dark brown narrow area. Cell r_1 with 3 marginal hyaline spots (sometimes 2 hyaline spots in males). Cell r_{2+3} basally hyaline, with 2-3 large hyaline spots aligned with largest spot in cell r_1, 1-2 anterior spots of variable size, 0-2 posterior spots, 1 anterior marginal hyaline spot, closer to apex of vein R_{2+3} and 1 posterior subapical hyaline spot touching vein R_{4+5}. Cell br with 3-4 hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} with 7-10 diffuse hyaline marks small to large, usually distributed in two rows, one along close to vein R_{4+5} and other along close to vein M_1 and 1 large apical

hyaline spot between vein R_{4+5} and M_1. Cell m_1 usually with 3 marginal hyaline spots (sometimes with 1-2 spots) and anterior spots, 1 elongated touching vein M_1 and 0-2 small. Cell m_4 usually with 2 marginal hyaline spots (sometimes with 3 hyaline spots).

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape brown, length 0.74–0.92 mm, oviscape length to thorax length ratio 0.69–0.88; with evenly distributed brown setulae. Eversible membrane (Fig. 62) length 0.76–0.84 mm. Aculeus (Fig. 85) pale brown, esclerozado, length 0.63–0.67 mm; in ventral view with tip pointed (Fig. 109). Spermathecae brown, subspherical, length 0.13–0.15 mm, surface with papillae (Fig. 133).

Male terminalia: Epandrium in posterior view (Fig. 157) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved and with apex bluntly truncate, with distributed setulae (Figs. 157), in lateral view with dorsal lobe broad medially (Fig. 185). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 157); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setuae laterally and ventrally. Distiphallus with 2 large spines, 1 each lateral side of preglans. Glans with acrophallus short, length 0.21–0.23 mm. (Fig. 213).

Distribution. Highland areas of Costa Rica (San José), Guatemala (Huehuetenango, Sacatepequez), and southern Mexico (Chiapas). Elevational records from label data of examined specimens range from 2700-3200 m.

Biology. No host plant information is known for this species.

Type data. The holotype male of *C. trinotata* is labeled “GUATEMALA: San Marcos 11.5 km. NW. San Marcos l5°0l' --91°48' –W 3000 mts. 24-25 May 1973” / “Erwin & Hevel Central American Expedition, 1973” / “wing slide #7” / “F-7” / “USNM Type No 75862” / “Gonioxyna tripunetata Foote d.RHFoote ‘78” / “Holotype Gonioxyna trinotata Foote” / “*Campiglossa trinotata* (Foote) S. Lampert & A. L. Norrbom VIII.2017”.

Other Specimens examined: COSTA RICA: San José: Páramo Cerro Estaquero, km 94, Carretera Interam, 94, 9°36.25'N 83°46.04'W, 3200 m, 20 May 1997, A. L. Norrbom, 1m (USNMENT00050156); Estacíon Biologica Cerro de la Muerte, Pan-Am Hwy / intersec.road

to San Gerardo, 3000 m, 25 Apr 1999, P. Hanson, beating *Buddleja*, 1m (USNMENT00214501). **GUATEMALA: Huehuetenango**: Chiantla, Sierra de los Cuchumatanes road, just below mirador, 15.39907°N 91.43994°W, 3020 m, 25 Nov 2007, on *Gnaphalium*-like plant, B. D. Sutton, A. L. Norrbom, J. Monzón, F. Camposeco, waypt. 94, 1m 1f (USNMENT00671523–24); **Sacatepéquez:** Antigua, 11 Feb 1979, G. E. Bohart, 4 km S, 12 km W. Cartago, Cartago Prov. Costa Rica, 4 Aug 1965, S. J. Arnold collector, 1m (USNMENT00119324). **MEXICO: Chiapas:** Union Juarez: slope volcan Tacaná, Chiquihuites, 15°05'N 92°06'W 1800-2000 m, 2-5 Nov 1994, A. L. Norrbom, L. E. Carroll & C. Estrada, 1f (USNMENT00118659); NW of Union Juarez: s slope volcan Tacaná, Chiquihuites, 15°05'N 92°06'W 2700 m, 17 Nov 1994, L. E. Carroll & C. Estrada, 1m (USNMENT00118660).

***Campiglossa venezolensis* (Hering)**

Figs. 256–258

Paroxyna venezolensis Hering 1939: 184 [description, Venezuela]; Aczél 1950: 290 [catalog]; Foote 1967: 35 [catalog].
Campiglossa venezolensis: Norrbom *et al*. 1999: 114 [new combination, catalog].

Diagnosis. This species differs from all of its neotropical congeners having posterior orbital seta lateralclinate. This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 4 in having the female wing with 3 large hyaline spots basally in cell r_{4+5} (Fig. 256). It differs from *Campiglossa* n. sp. 4 in having distiphallus with 2 groups of spines on both lateral sides of preglans, and the glans with the apical tube tapered (Fig. 217).

Description. Body length 4.82 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.96 mm) than long (0.63 mm), 0.65 times as high as long (Fig. 256). Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, with medial extension reaching ocellar tubercle, parafacial whitish. 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, lateralclinate. Gena with few small lanceolate, brown setulae dorsally and row of lanceolate, white setae on ventral margin. Eye ovoid, long diameter 0.72 mm. Antenna brown, first flagellomere longer than wide.

Thorax: Length 2.27 mm (Figs. 256–257). Ground color dark brown, scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow. Anepimeral seta lanceolate, white to yellow (concolorous with setulae).

Wing: Length 4.00 mm, width 1.47 mm. Pattern reticulate (Fig. 256), with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m. Cell r_1 with 3 large marginal hyaline spots. Cell r_{2+3} medially with 3 large hyaline spots obliquely aligned with proximal 3 large spots in r_1, 2-3 minute preapical hyaline spots, and 2 marginal hyaline spots, anterior touching vein R_{2+3} and posterior touching vein R_{4+5}. Cell br with 2-3 hyaline spots distal to crossvein bm-m, the least, reaching vein R_{4+5} and M_1. Cell r_{4+5} with 3 large hyaline spots basally, 2 preapical spots aligned with anterior marginal spot in r_{2+3}, and usually with 1 large marginal preapical hyaline spot between vein R_{4+5} and M_1. Cell dm with 2 large basally and 4 spots apically. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 5-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (Fig. 256).

Abdomen: Ground color dark brown, with gray microtrichia. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, female tergite 6 with row of large acuminate, pale brown setae (Figs. 256–257).

Female terminalia: Oviscape dark brown, bright, with evenly distributed acuminate brown setulae (Fig. 257).

Distribution. Venezuela.

Biology. No host plant information is known for this species.

Type data. The holotype female is labeled “TYPE” / “Lindig 1864 Venezuela” / “Tephritis Alte Sammlung” / “Paroxyna venezolensis Type ♀ det. M. Hering 1938” (Figs. 256–258). The holotype (photos examined) is double mounted (minuten), is in good condition, and is deposited in the NMW.

***Campiglossa* n. sp. 1**

Figs. 17–18, 63, 86, 110, 134, 158, 186, 214

Diagnosis. This species differs from all of its species of neotropical congeners in having distiphallus with a group of 5-8 spines on both lateral sides of preglans and apically sclerotized tube (Fig. 214). This species differs from all of its neotropical congeners except *C. trinotata* and *Campiglossa* n. sp.15 in having posterior orbital seta inclinate. It differs from *C. trinotata* in having male with broad dark brown area posterior to pterostigma, extended apically in cell r_1 with 3 large apical hyaline spots (Figs. 15–16). It differs from *Campiglossa* n. sp.15 in having wing with pattern hyaline light brown; apical half predominantly darkened from pterostigma to apical cell r_{4+5} (without rounded spots) (Fig. 44).

Description. Body length 2.80–4.22 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.80–0.97 mm) than long (0.54–0.58 mm), 0.60–0.68 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish. Frons length (0.41–0.49 mm) less than width at vertex (0.47–0.63 mm), slightly narrowed to anterior margin (0.39–0.48 mm). 2 dark brown to black frontal setae, acuminate, equal in size, relatively long (1 specimen with third setae on 1 side and 4 setae on other side). Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, acuminate. Gena with few small lanceolate, white to yellow setulae on dorsally (sometimes yellow to brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.22. Eye ovoid, long diameter 0.68–0.77 mm, width 0.46–0.49 mm, ratio 0.64–0.68. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.20–0.23 mm, width 0.15–0.20 mm, ratio 0.77–0.79.

Thorax: Length 1.19–1.63 mm. Ground color dark brown; scutum usually with 5 yellowish vittae, sub lateral vitta extended to scutellum; scutellum brown at base, yellowish apically (sometimes yellowish medially). Mesonotum gray microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta more than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.50–4.30 mm, width 1.40–1.70 mm. Pattern reticulate. Both sexes (Figs. 17–18) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4.

Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 3 marginal hyaline spots. Cell r_{2+3} medially usually with 2 large hyaline spots obliquely aligned with proximal 2 large spots in r_1, 2-3 minute preapical hyaline spots, 1 marginal hyaline spot closer to apex of vein R_{2+3} and 1 posterior subapical hyaline spot touching vein R_{4+5}. Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}, with 3-4 hyaline spots subbasally, sometimes diffuse and/or fused into large irregular mark, 2 preapical spots aligned with marginal spot in cell r_{2+3}, and 1 marginal preapical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 4-6 preapical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 5-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with gray microtrichia. Each tergites with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except 1-2 rows of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape dark brown, bright, length 1.05–1.28 mm, oviscape length to thorax length ratio 0.60–0.72; with evenly distributed yellowish to brown setulae. Eversible membrane (Fig. 63) length 0.95–1.02 mm. Aculeus (Fig. 86) all pale brown, length 0.94–1.04 mm, in ventral view with tip rounded (Fig. 110). Spermathecae brown, elongated, length 0.14–0.17 mm, surface with some papillae (Fig. 134).

Male terminalia: Epandrium in posterior view (Fig. 158) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved and with apex bluntly truncate, with distributed setulae, except small ventral ventrally area (Fig. 158), in lateral view with dorsal lobe serrate, usually broadest medially and dorsally (Fig. 186). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial; medial prensiseta on dorsal lobe (Fig. 158). Proctiger with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with a group of 5-8 spines on both lateral sides of preglans. Glans with acrophallus elongate, length

0.51 mm (Fig. 214), apically with sclerotized tube.

Distribution. Costa Rica (San José); Guatemala (Huehuetenango); Mexico (Chiapas, Mexico, Michoacan, Morelos, Veracruz). Elevational records from label data of the examined specimens range from 1800-3900 m.

Biology. This species has been reared ex flowers of *Barkleyanthus salicifolius* (H.B.K.), *Bidens ostruthioides* (DC.) Sch. Bip, *Jessea cooperi* (Greenm.) H.Rob., *Pentacalia pachypus* (Greenm) Cuatrec., *Psacalium peltatus* Cass., and *Senecio iodanthus* Greenm.

Type data. The holotype male is labeled "COSTA RICA: San José: Rt. 2 (PanAm Hwy.), km 36-39, 12-15 nr. Casa Mata (9°47'N 83°59'W), 12-15 km NW Empala" / "reared ex flowers Jessea cooperi (92CR13) coll. 7.XI.1992, A.L. Norrbom & G.J. Steck" / "USNMENT00118501" [plastic bar code label]. It is double mounted (minuten), is in excellent condition, and is deposited in the USNM. Paratypes: **GUATEMALA: Huehuetenango:** Sierra de los Cuchumatanes, Paquix, rocky outcrop, 15.4409°N 91.46945°W, 3183 m, emerged 29 Nov - 9 Dec 2007 reared ex flowerheads of *Ageratina pringlei* (07G67) [Asteraceae] collected 25 Nov 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, F. Camposeco, 2m 1f (USNM USNMENT00671478–80). **Other Specimens examined: COSTA RICA: San José:** 12-15 km NW Empalme, Rt. 2, km 36-39, nr. Casa Mata, 9°47'N 83°59'W, reared ex flowers of *Jessea cooperi* (92CR13) [Asteraceae], 7 Nov 1992, A. L. Norrbom & G. J. Steck, 51m 36f 1p (USNM USNMENT00118356, USNMENT00118418–42, USNMENT00118502–15, USNMENT00118615, USNMENT00118710, USNMENT00118728–43, USNMENT00118745–85). **MEXICO: Chiapas:** Union Juarez, s slope volcan Tacaná, Chiquihuites, 15°5'N 92°6'W, 2700 m, 17 Nov 1994, A. L. Norrbom, L. E. Carroll & C. Estrada, 1f (USNMENT00118657); Union Juarez, s slope volcan Tacaná, Chiquihuites, 15°5'N 92°6'W, 1800-2000 m, 5 Nov 1994, A. L. Norrbom, L. E. Carroll & C. Estrada, 14m 15f (USNM/IEXA USNMENT00118358–59, USNMENT00118443–51, USNMENT00118453–56, USNMENT00118457–69). **Mexico:** 19°4'N 99°20'W, reared ex capitulae of *Senecio iodanthus* Greenm. (91M33) [Asteraceae], 2 Oct 1991, A. L. Norrbom, 2m (USNM USNMENT00118661–62); 19°4'N 99°20'W, reared ex capitulae of *Senecio iodanthus* Greenm. (91M33) [Asteraceae], 2 Oct 1991, A. L. Norrbom, 13m 9f (USNM/IEXA USNMENT00118349, USNMENT00118352, USNMENT00118580–02); 19°4'N 99°20'W, reared ex capitulae of *Bidens ostruthioides* (DC.) Sch. Bip (91M32) [Asteraceae], 2 Oct 1991, A. L. Norrbom, 3m 2f 3p (USNM/IEXA USNMENT00118350, USNMENT00118402–05); 19°4'N 99°20'W, reared ex capitulae of *Bidens ostruthioides* (DC.) Sch. Bip (91M32) [Asteraceae], 2 Oct 1991, A. L. Norrbom, 2m 3f (USNM/IEXA

USNMENT00119135–36, USNMENT00119140–42). **Michoacán:** Angangueo, 19°37'N 100°18'W, 6-8 km N of, reared ex capitulae of *Bidens ostruthioides* (DC.) Sch. Bip. (91M43) [Asteraceae], 7 Oct 1991, A. L. Norrbom, 5m 5f 3p (USNM/IEXA USNMENT00118353, USNMENT00118396–97, USNMENT00118407–10, USNMENT00119137–39); Angangueo, 19°37'N 100°18'W, reared ex immature capitulae of *Psacalium peltatus* Cass. (91M9C) [Asteraceae], 4-5 Oct 1991, A. L. Norrbom, 1f (USNM USNMENT00119317). **Morelos:** Huitzilac & Lago Zempoala km 6 btw, 19°2'N 99°16'W, reared ex immature capitulae of *Psacalium peltatum* Cass. (91M9A) [Asteraceae], 22 Sept 1991, A. L. Norrbom, 7m 8f 7p (USNM/IEXA USNMENT00119299, USNMENT00119300–13). Lago de Zempoala, 19°2'58"N 99°19'3"W, 23-25 Sep 1991, A. L. Norrbom, 3f (USNM/IEXA USNMENT00119314–16). **Veracruz:** Rt. 140 (Xalapa - Perote) 3 km NW Acajete, 19°2'N 99°16'W, reared ex capitulae of *Psacalium peltatus* Cass. (91M9A) [Asteraceae], 22 Sept 1991, A. L. Norrbom, 21m 31f 7p (USNM/IEXA USNMENT00118348, USNMENT00118351, USNMENT00118603–14, USNMENT00118616–17, USNMENT00118619–26, USNMENT00118628–51, USNMENT00118663–67).

***Campiglossa* n. sp. 2**

Figs. 19–20, 62, 87, 111, 135, 159, 187, 215

Diagnosis. This species differs from all of its neotropical congeners in having wing with broad brown band between pterostigma and apical vein m_4 (more expressive in males) (Figs. 19–20); wing with a subapical row of large spots (two in cell r_{2+3}, two in r_{4+5} and one in cell m_1) forming a line (Figs. 19–20) and distiphallus with 2 groups of spines on both lateral sides of preglans (on one side a group of 5-6 spines, on other with 7-8 large spines), and glans with acrophallus elongate, apically with sclerotized cylindrical curved tube (Fig. 215).

Description. Body length 4.00–5.15 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.97–1.05 mm) than long (0.65–0.67 mm), 0.63–0.67 times as high as long. Mostly yellow, ocellar tubercle brown, occiput mostly black except dorsally, face and parafacial whitish which extends to vertex and ocellar tubercle. Frons length (0.56–0.57 mm) less than width at vertex (0.64–0.65 mm), slightly narrowed to anterior margin (0.44–0.48 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, inclinate. Gena with few small

lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.29–0.30. Eye ovoid, long diameter 0.75–0.85 mm, width 0.55–0.60 mm, ratio 0.25–0.30. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.22–0.25 mm, width 0.15–0.19 mm, ratio 0.68–0.72.

Thorax: Length 1.42–1.62 mm. Ground color dark brown; scutum usually with 5 yellowish vittae, sub lateral vitta extended to scutellum; scutellum brown at base, yellowish apically (sometimes yellowish medially). Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 4.00–4.90 mm, width 1.70–1.90 mm. Pattern reticulate. Both sexes (Figs. 19–20) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot (sometimes absent in male), broad brown band between pterostigma and apical crossvein dm-m with hyaline spots in female. Pterostigmal brown area not extending into cell r_1 along costa. Cell r_1 with 3 large marginal hyaline spots (presence of 2-4 proximal spots small, rounded in female). Cell r_{2+3} basally to r-m with 1-10 small, weak, diffuse hyaline marks in female (without hyaline marks on male), medially with 2 large hyaline spots obliquely aligned with proximal 2 large spots in r_1, 2–5 minute preapical hyaline spots, 1 submarginal hyaline spot touching vein R_{4+5} and 1 marginal hyaline spot near vein R_{2+3}. Cell br with row 4-5 small hyaline spots distal to crossvein bm-m, touching vein M_1 and less than half width of cell br. Cell r_{4+5} with 6-12 hyaline spots subbasally (approximately aligned with dm-m and spots in r_1 and r_{2+3}), sometimes diffuse and/or fused into large irregular mark, 2 preapical spots aligned with marginal spot in r_{2+3} (sometimes with 1 preapical small hyaline spot), without apical hyaline spot between vein R_{4+5} and M_1. Cell m_1 with 3 marginal or submarginal hyaline spots and 1-3 anterior spots. Cell m_4 with 4-7 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape dark brown, bright, length 1.32–1.52 mm, oviscape length to thorax length ratio 0.81–0.88; with evenly distributed brown setulae. Eversible membrane (Fig. 62) length 0.95–1.12 mm. Aculeus (Fig. 87) pale brown, length 0.81–1.17 mm, in ventral view with basal central area not sclerotized; tip slightly elongated triangular, tip pointed (Fig. 111). Spermathecae brown, elongate, length 0.17–0.19 mm, surface with papillae (Fig. 135).

Male terminalia: Epandrium in posterior view (Fig. 159) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved and with apex bluntly truncate, with distributed setulae, except in a small area near the apex (Fig. 159), in lateral view with dorsal lobe serrated, usually broadest medially (Fig. 187). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial; medial prensiseta on dorsal lobe (Fig. 159). Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 spines, on other with 7-8 large spines (Fig. 215). Glans with acrophallus elongate, length 0.40–0.48 mm, apically with sclerotized tube.

Distribution. Mexico (Distrito Federal, Morelos, Veracruz). Elevational records from label data of the examined specimens range from 2286-3100 m.

Biology. This species has been swept from *Barkleyanthus salicifolius* (Kunth) H. Rob. & Brettell.

Type data. The holotype male is labeled “MEXICO: Dist. Fed. Rt. 95 btw. km 42-43, 1 km N La Cima, near train overpass, 8.VIII.1989, A. L. Norrbom” / “on Barkleyanthus salicifolius (H.B.K.) H. Robins. & Brett. (89M1)” / “USNMENT00118782” [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the IEXA. Paratypes: **MEXICO. Distrito Federal**: Rt. 95 btw. km 42-43, 1 km N La Cima, near train overpass, 19°7'N 99°12'W, on *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1) [Asteraceae], 8 Aug 1989, A. L. Norrbom, 12m 8f (USNM/IEXA USNMENT00118364, USNMENT00118368, USNMENT00118371–72, USNMENT00118956–65, USNMENT00118969–73, USNMENT00119004); same, (91M1) [Asteraceae], 20-26 Sep 1991, A. L. Norrbom, 3m (USNM/IEXA USNMENT00118966–68).

Other Specimens examined: Morelos: Huitzilac & Lagunas de Zempoala, between, km 9-10, 19°2'N 99°17'W, on *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (91M1A), 22-24 Sep 1991, A. L. Norrbom, 2f (USNM USNMENT00118977–78); Lago de Zempoala, 19°2'58"N 99°19'3"W, on *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett., 23-25 Sep

1991, A. L. Norrbom, 1f (USNM USNMENT00118976); Parque Lag. de Zempoala path along L. Zempoala, on *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1), 10-11 Aug 1989, A. L. Norrbom, 3f (USNM/IEXA USNMENT00118363, USNMENT00118974–75). **Veracruz**: Rt 140 km 85, SW San Antonio Limon, on *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1) [Asteraceae], 24 Aug 1989, A. L. Norrbom, 1m 1f (USNM USNMENT00118369–70); Estación Microondas Las Lajas, km 16, 19°35'N 97°5'W, 3100 m, on *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (89M1) [Asteraceae], 19 Aug 1989, A. L. Norrbom & J. Valenzuela, 2f (USNM USNMENT00118367, USNMENT00118979).

***Campiglossa* n. sp. 3**

Figs. 21–23, 65, 88, 97, 112, 121, 136, 145, 160, 188, 216

Diagnosis. This species differs from all of its neotropical congeners having spermathecae spherical (Figs. 136–145) and distiphallus with 5-6 long spines laterally (Fig. 216). This species differs from all of its neotropical congeners except *C. conspersa*, *C. trinotata* in having the aculeus tip with lateral margin angulate (Fig. 112). It differs from *C. conspersa* in having the area in wing with broad dark brown area posterior to pterostigma, extended apically in cell r_1 with 3 marginal preapical hyaline spots in cell r_1 (central large and 2 laterally smaller) on male (Fig. 3). It differs from *C. trinotata* in having male with broad dark brown area posterior pterostigma, extended apically in cell r_1 with 3 large apical hyaline spots (Figs. 15–16).

Description. Body length 2.67–4.85 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.71–1.00 mm) than long (0.54–0.73 mm), 0.73–0.88 times as high as long. Mostly yellow, ocellar tubercle brown, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Face and parafacial whitish which extends to orbital posterior seta. Frons length (0.44–0.56 mm) less than width at vertex (0.48–0.65 mm), slightly narrowed to anterior margin (0.29–0.48 mm). 2 dark brown to black frontal setae, acuminate, equal in size, relatively long. (1 specimen with third setae on 1 side and third - fourth setae on other side of smaller size). Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally, and row of lanceolate, white

setae on ventral margin; gena height to eye long diameter ratio 0.21–0.29. Eye ovoid, long diameter 0.60–0.75 mm, width 0.55–0.60 mm, ratio 0.37–0.46. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.17–0.27 mm, width 0.11–0.18 mm, ratio 0.69–0.70.

Thorax: Length 1.11–1.68 mm. Ground color dark brown; scutum usually with 5 yellowish vittae, sub lateral vitta extended to scutellum; scutellum brown at base, yellowish apically (sometimes brown apically on males). Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.69–4.25 mm, width 1.48–1.56 mm. Pattern reticulate. Both sexes (Figs. 21–23) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4 (female with light-colored wing). Pterostigma brown with subapical marginal orange spot (sometimes absent in male), brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots. Cell r_1 with 3 large marginal hyaline spots. Cell r_{2+3} medially usually with 2 large hyaline spots obliquely aligned with proximal 2 large spots in r_1, 4–5 minute preapical hyaline spots, and 1-2 marginal hyaline spots. Cell br with 3 large hyaline spots distal to crossvein bm-m, crossing cell. Cell r_{4+5} with 3-4 hyaline spots subbasally (approximately aligned with dm-m and spots in r_1 and r_{2+3}), sometimes diffuse and/or fused into large irregular mark, 2 preapical spots aligned with anterior marginal and submarginal spots in r_{2+3} (sometimes with 1 minute preapical spot), and usually with 1 marginal apical hyaline spot (sometimes absent). Cell m_1 with 3 marginal or submarginal hyaline spots and 1-2 anterior spots. Cell m_4 with 4-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia (male with microtrichia brown bright). Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape dark brown, bright, length 1.12–1.18 mm, oviscape length to thorax length ratio 0.73–0.75; with evenly distributed acuminate brown setulae. Eversible membrane (Fig. 65) length 1.05–1.10 mm. Aculeus (Fig. 88) pale brown, length 1.03–1.10

mm, in ventral view with basal central area not sclerotized; tip elongated, apex pointed (Fig. 112). Spermathecae brown, spherical, length 0.16–0.20 mm, surface with papillae (Fig. 136).

Male terminalia: Epandrium in posterior view (Fig. 160) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view, strongly medially curved setulose except apically (Figs. 160), in lateral view with dorsal lobe serrate (ondulated) (Fig. 188). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 160); medial prensiseta on dorsal lobe (Fig. 160). Proctiger with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with 5-6 long spines, in lateral position of distiphallus (Fig. 216). Glans with acrophallus elongate, length 0.52–0.64 mm, apically with sclerotized tube (tapered).

Distribution. Highland central Mexico (Mexico). Elevational records from label data of the examined specimens is 3900 m.

Biology. This species has been reared from flowerheads of *Barkleyanthus salicifolius* (Kunth) H. Robins. & Brettell, *Oxylobus arbutifolius* (Kunth) A. Gray, *Senecio cinerarioides* H.B. K., and *Senecio mairetianus* DC.

Type data. The holotype male is labeled "MEXICO: Mexico, Parque Popo-Izta, Estacion Tlamacas, 3900 m, 13. VIII. 1989, A. L. Norrbom" / "sweeping Senecio mairetianus DC. (89M15)" / "USNMENT00120052" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the IEXA. Paratypes: **MEXICO. México:** Parque Popo - Izta, Rt 451 (Amecameca - Cholula), 3900 m, reared ex flowers of *Senecio cinerarioides* Kunth (89M17), 13 Aug 1989, A. L. Norrbom, 2m 4f (USNM/IEXA USNMENT00118374–75, USNMENT00118912, USNMENT01232011, USNMENT01355058, USNMENT01355060); Parque Popo - Izta, Rt 451 (Amecameca – Cholula), 3900 m, reared ex flowers of *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett (89M1), 13 Aug 1989, A. L. Norrbom, 1m (USNM USNMENT00118839); Parque Popo - Izta, Rt 451 (Amecameca – Cholula), 3900 m, reared ex flowers of *Senecio cinerarioides* H.B.K (89M17), 13 Aug 1989, A. L. Norrbom, 2m 1p (USNM USNMENT00118412, USNMENT00118937); Parque Popo - Izta, Rt 451 (Amecameca - Cholula), 3900 m, sweeping *Oxylobus arbutifolius* (Kunth) A. Gray (89M16), 13 Aug 1989, A. L. Norrbom, 1f (USNM USNMENT01232010).

***Campiglossa* n. sp. 4**

Figs. 24–25, 66, 89, 113, 137, 161, 189, 217

Diagnosis. This species differs from all of its species of neotropical congeners having the distiphallus with 2 groups of spines on both lateral sides of preglans and glans with apical tube tapered (Fig. 217). This species differs from all of its neotropical congeners except *C. venezolensis* in having female with cell r_{4+5} with 3 large rounded hyaline spots basally (Fig. 25). It differs from *C. venezolensis* in having posterior orbital seta lateralclinate.

Description. Body length 3.47–4.46 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.82–0.95 mm) than long (0.53–0.59 mm), 0.62–0.65 times as high as long. Mostly yellow, ocellar tubercle brown, occiput brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish, which extends to anterior orbital setae. Frons length (0.42–0.48 mm) less than width at vertex (0.53–0.55 mm), slightly narrowed to anterior margin (0.36–0.42 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.17–0.23. Eye ovoid, long diameter 0.63–0.78 mm, width 0.42–0.57 mm, ratio 0.67–0.73. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.21–0.23 mm, width 0.17–0.19 mm, ratio 0.81–0.83.

Thorax: Length 1.30–1.53 mm. Ground color dark brown; scutum usually with 5 yellowish weak vittae; scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.69–4.10 mm, width 1.48–1.51 mm. Pattern reticulate. Both sexes (Figs. 24–25) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot. Cell r_{2+3} with spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 3 large marginal hyaline spots. Cell

r_{2+3} medially usually with 3 large hyaline spots obliquely aligned with proximal 3 large spots in r_1, 3–4 minute preapical hyaline spots, 1 anterior marginal hyaline spot, and 1 submarginal hyaline spot (sometimes connected with anterior marginal spot). Cell br with 2-3 large hyaline spots distal to crossvein bm-m, usually crossing cell. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}, with 2-6 hyaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with marginal spot in r_{2+3}, and 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 3-4 anterior and 3 marginal or submarginal hyaline spots.

Cell m_4 with 1 anterior and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with microtrichia. Each tergite with a pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae (higher in females). Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 1.24 mm, oviscape length to thorax length ratio 0.80; with evenly distributed brown setulae. Eversible membrane (Fig. 66) length 1.10 mm. Aculeus (Fig. 89) pale brown, length 1.05 mm, in ventral view with with tip rounded (Fig. 113). Spermathecae brown, subspherical, length 0.18 mm, surface with papillae (Fig. 137).

Male terminalia: Epandrium in posterior view (Fig. 161) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved and with apex bluntly truncate, with distributed setulae, except in a small area near the apex (Figs. 161), in lateral view with serrated dorsal lobe dorsally (Fig. 189). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial; medial prensiseta on dorsal lobe (Fig. 161). Proctiger with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with 2 groups of spines on both lateral sides of preglans. Glans with acrophallus elongate, length 0.46–0.52 mm. (Fig. 217), apically with sclerotized tube (tapered).

Distribution. Highland areas of central Mexico (Distrito Federal, Morelos). Part of the type series was collected at 3900 m elevation.

Biology. This species has been reared from flowerheads of *Barkleyanthus salicifolius* (Kunth) H.Rob. & Brettell.

Type data. The holotype male is labeled "Mexico: Mexico, Parque Popo-Izta, Estacion Tlamacas, 3900 m, 13.VIII.1989, A. L. Norrbom" / "reared ex. flowers of Barkleyanthus salicifolius (H.B.K.) H. Robins. & Brett. (89M1)" / "(USNMENT00118829)" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the IEXA. Paratypes: **MEXICO. Distrito Federal:** La Cima, 19°7'N 99°12'W, 26 Sep 1991, A. L. Norrbom, 1m (USNM USNMENT00118843). **Morelos:** Parque Iztaccíhuatl-Popocatépetl, (Amecameca - Cholula), Rt 451, 3900 m, reared ex flowers of *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1) [Asteraceae], 13 Aug 1989, A. L. Norrbom, 15m 27f (USNM/IEXA USNMENT00118383, USNMENT00118385, USNMENT00118828, USNMENT00118830–38, USNMENT00118840, USNMENT00118851–77); Rt. 890, km 9 area, 6 km W Lago Zempoala, 19°5'N 98°43'W, 3900 m, reared ex. flowers of *Barkleyanthus salicifolius* (H. B. K.) H. Robins. & Brett. (91M1D) [Asteraceae], 2 Sep 1991, A. L. Norrbom, 2m 1f (USNM/IEXA USNMENT00118384, USNMENT00118841–42).

***Campiglossa* n. sp. 5**

Figs. 26–27, 67, 90, 114, 138, 162, 190, 218

Diagnosis. This species differs from all of its neotropical congeners for distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). This species differs from all of its neotropical congeners except *C. despecta*, *C. luculenta*, *C. taenipennis*, *Campiglossa* n. sp. 9, *Campiglossa* n. sp. 17 in having the spermathecae elongated (Fig. 138). It differs from *C. despecta* in having distiphallus with 2 rows of spines, long, strong and same size, in both sides of preglans (Fig. 208). It differs from *C. luculenta* in having distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It differs from *C. taenipennis* in having the distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212); aculeus all yellowish (Fig. 84). It differs from *Campiglossa* n. sp. 9 in having abdomen black, bright; tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black. It differs from *Campiglossa* n. sp. 17 in having distiphallus with 2 cluster of 7-8 spines each sides of preglans (Fig. 230). This species differs from all of its neotropical congeners except *C. taenipennis*, *Campiglossa* n. sp. 10, *Campiglossa* n. sp. 12, *Campiglossa* n. sp. 18,

Campiglossa n. sp. 20 and *Campiglossa* n. sp. 21 in having cell r_{2+3} with 2 marginal rouded hyaline spots (Figs. 26–27). It differs from *Campiglossa* n. sp. 10 in having second anepisternal seta acuminate, black; proctiger with setae very dense and staut (Fig. 167). It differs from *Campiglossa* n. sp. 12 in having lateral surstylus with serrated dorsal lobe, distinct alongated (Fig. 197). It differs from *Campiglossa* n. sp. 18 in having distiphallus with spines on both lateral sides of preglans, on one side 1 conical large spine, on other with 2 conical large spines (Fig. 231). It differs from *Campiglossa* n. sp. 20 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 233). It differs from *Campiglossa* n. sp. 21 in having distiphallus with strong and long spines on both lateral sides of preglans, a group of 5-8 spines each side (Fig. 234).

Description. Body length 3.56–4.42 mm, dark brown in ground color, mostly gray to brown microtrichose. Setae dark brown to black.

Head: Slightly higher (0.81–0.98 mm) than long (0.54–0.66 mm), 0.43–64 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes, face and parafacial whitish. Frons length (0.40–0.52 mm) less than width at vertex (0.49–0.61 mm), slightly narrowed to anterior margin (0.37–0.51 mm). 2 frontal setae, acuminate, equal in size (2 specimens with third setae on 1 side). Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.18–0.19. Eye ovoid, long diameter 0.66–0.79 mm, width 0.44–0.57 mm, ratio 0.66–0.72. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.20–0.24 mm, width 0.15–0.17 mm, ratio 0.66–0.73.

Thorax: Length 1.26–1.59 mm. Ground color dark brown; scutum gray microtrichose in anterior margin and yellow microtrichose the posterior margin, scutum usually with 5 yellowish vittae, sublateral vitta extended to scutellum; scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.26–3.53 mm, width 1.25–1.32 mm. Pattern reticulate. Both sexes

(Figs. 26–27) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot (absent in female (Fig. 27)), brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, more than half width of cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 3 large marginal hyaline spots, crossing cell. Cell r_{2+3} medially usually with 3 large hyaline spots obliquely aligned with large spot in r_1, 1-2 minute preapical hyaline spots, and 2 marginal hyaline spots, anterior touching vein R_{2+3} and posterior touching vein R_{4+5}. Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}, 3 hyaline spots subbasally, 2 preapical spots aligned with anterior marginal spot in r_{2+3}, and 1 marginal apical or preapical hyaline spot between vein R_{4+5} and M_1. Cell dm with 3 large spost basally and 2 small preapical spots. Cell m_1 with 3 marginal hyaline spots and 1-2 large anterior spot. Cell m_4 with 5-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 1.17–1.24 mm, oviscape length to thorax length ratio 0.88–0.90; with evenly distributed acuminate brown setulae. Eversible membrane (Fig. 67) length 0.91–1.03 mm. Aculeus (Fig. 90) all pale brown, length 0.85–0.98 mm; in ventral view with tip slightly triangular (Fig. 114). Spermathecae brown, elongate, length 0.18–0.19 mm, surface with papillae (Fig. 138).

Male terminalia: Epandrium in posterior view (Fig. 162) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view strongly medially curved, with distributed setulae (Figs. 162), in lateral view with dorsal lobe sharply serrated (Fig. 190). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 162); Proctiger elongate, with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with large spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). Glans with acrophallus elongate, length 0.42 mm, apically with sclerotized tube.

Distribution. Highland western Venezuela (Mérida). The type series was collected in the Venezuelan Andes; one paratype was collected at 3500 m elevation.

Biology. This species has been reared from flowerheads of *Lasiocephalus patens* (Kunth) Cuatrec., *Pentacalia pachypus* (Greenm) Cuatrec., *P. andicola* (Turcz.) Cuatrec., and *Ruilopezia floccosa* (Standl.) Cuatrec.

Type data. The holotype male is labeled "VENEZUELA: Mérida: Páramo Mucubaji, Lag[una]. Negra area 28-31.X.1989, A. L. Norrbom" / "reared ex. flowers of Pentacalia andicola (Turcz.) Cuatr. (89V26)" / "USNMENT00120068" [plastic bar code label]. It is double mounted (minuten), is in fair condition (right wing in slaid) and is deposited in the USNM. Paratypes: **VENEZUELA. Mérida:** Páramo Mucubaji, Lag. Negra area, reared ex flowers of *Pentacalia andicola* (Turcz.) Cuatr. (89V26), 28-31.X.1989, A. L. Norrbom, 1m 1f (USNMENT00120066, USNMENT01355002); Páramo Mucubaji, Lag. Negra area, reared ex flowers of *Lasiocephalus patens* (H.B.K.) Cuatr. (89V22), 28-31.X.1989, A. L. Norrbom, 1f (USNMENT00120069); Páramo Mucubaji, Lag. Negra area, reared ex flowers of *Ruilopezia floccosa* (Standl.) Cuatr. (89V21), 28-31.X.1989, A. L. Norrbom, 1f (USNMENT01355003); Parq. Nac. Sierra Nevada, trail btw. L. Mucubají & L. Negra, reared ex. flowers of *Pentacalia pachypus* (Greenm.) Cuatr. V-10, 3500 m, 4.VI.1988, A. L. Norrbom & G. J. Steck, 1f (USNMENT00119090).

Campiglossa n. sp. 6

Figs. 28–29, 68, 91, 115, 139, 163, 191, 219

Diagnosis. This species differs from all of its neotropical congeners in having distiphallus with 5-7 spines on both lateral sides of preglans and apically with sclerotized tube (Fig. 219). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 2 in having the aculeus pale brown, esclerozado (Fig. 91). It differs from *Campiglossa* n. sp. 2 in having wing with broad brown band between pterostigma and apical crossvein dm-m (more expressive in males); wing with a subapical row of large spots (two in cell r_{2+3}, two in r_{4+5} and one in m_1) forming a line (Figs. 19–20).

Description. Body length 3.59–3.69 mm, dark brown in ground color, gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.76–0.85 mm) than long (0.52–0.62 mm), 0.68–0.72 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except

dorsally, face and parafacial whitish. Frons length (0.39–0.40 mm) less than width at vertex (0.51–0.65 mm), slightly narrowed to anterior margin (0.37–0.44 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.21. Eye ovoid, long diameter 0.62–0.69 mm, width 0.46–0.61 mm, ratio 0.74–0.88. Antenna yellow to brown, first flagellomere with rounded tip, longer than wide, long diameter 0.19–0.23 mm, width 0.15–0.17 mm, ratio 0.73–0.74.

Thorax: Length 1.27–1.51 mm. Ground color dark brown; scutum usually with 5 yellowish vittae, sublateral vitta extended to scutellum; scutellum all brown (sometimes yellow apically). Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.63–3.80 mm, width 1.28–1.62 mm. Pattern reticulate. Both sexes (Figs. 28–29) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots in male. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m (Figs. 28–29). Cell r_1 with 3 marginal hyaline spots and 1-2 basal hyaline spots. Cell r_{2+3} between base and crossvein r-m with row 2-3 hyaline spots, with 2-3 large hyaline spots aligned with largest spot in cell r_1, with 1 anterior marginal hyaline spot, closer to vein R_{2+3} and 1 submarginal hyaline spot, close to vein R_{4+5} (sometimes connected with anterior marginal spot). Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}, with 2-6 yaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with marginal spot in cell r_{2+3}, and 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 4-6 preapical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 4-5 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly

setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape brown, length 1.02–1.12 mm, oviscape length to thorax length ratio 0.75–0.76; with evenly distributed brown setulae. Eversible membrane (Fig. 68) length 0.95–0.96 mm. Aculeus (Fig. 91) pale brown, esclerozado, length 0.93–0.95 mm, in ventral view with tip rounded (Fig. 115). Spermathecae brown, elongate, length 0.17–0.20 mm, surface with papillae (Fig. 139).

Male terminalia: Epandrium in posterior view (Fig. 163) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly medially curved, with distributed setulae, except apically (Figs. 163), in lateral view with dorsal lobe serrate (Fig. 191). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 163); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with 5-7 spines on both lateral sides of preglans (Fig. 219). Glans with acrophallus elongate, length 0.40–0.47 mm (Fig. 219), apically with sclerotized tube.

Distribution. Highland southern Mexico (Chiapas). The type series was collected at 2865 m elevation.

Biology. No host plant information is known for this species.

Type data. The holotype male is labeled "MEXICO, Chiapas Mt. Tzontehuitz, 9400' 12mi.NE San Cristobal 19.V.1969 B.V.Peterson" / "USNMENT01232015" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the USNM. Paratypes: **MEXICO: Chiapas:** Mt. Tzontehuitz, 9400' 19.3 km NE San Cristobal, 19.V.1969, B.V.Peterson, 1m 3f (USNMENT01232016–18, USNMENT00120024).

***Campiglossa* n. sp. 7**

Figs. 30–31, 69–70, 92–93, 116–117, 140–141, 164, 192, 220

Diagnosis. This species differs from all of its neotropical congeners having distiphallus with short spines on laterally and ventrally, a group of more of 10 spines each; glans with acrophallus elongate (length 0.44–0.46 mm) apically with sclerotized tube (Fig. 220).

Description. Body length 3.47–3.96 mm, dark brown in ground color, gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.78–0.86 mm) than long (0.57–0.63 mm), 0.66–0.81 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.41–0.54 mm) less than width at vertex (0.46–0.57 mm), slightly narrowed to anterior margin (0.34–0.40 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.21. Eye ovoid, long diameter 0.63–0.71 mm, width 0.48–0.51 mm, ratio 0.71–0.76. Antenna yellow; first flagellomere com a ponta aredondada longer than wide, long diameter 0.17–0.23 mm, width 0.13–0.17 mm, ratio 0.73–0.76.

Thorax: Length 1.13–1.40 mm. Ground color dark brown; scutellum brown at base, yellowish apically. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical setae half as long as basal seta. Anepimeral seta lanceolate, white to yellow (concolorous with setulae) (some females in having the second anepisternal seta white), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.33–4.05 mm, width 1.00–1.55 mm. Pattern reticulate. Both sexes (Figs. 30–31) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot (sometimes absent), brown area posterior to it in cell r_1 with hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. (Figs. 30–31). Cell r_1 with 3 marginal hyaline spots. Cell r_{2+3} between base and crossvein r-m with row of 4-5 hyaline spots along vein R_{4+5}, 2-3 large hyaline spots aligned with largest spot in cell r_1, 2 minute preapical hyaline spots, 1 anterior marginal hyaline spot closer to apex of R_{2+3} and 1 posterior submarginal hyaline spot closer to vein R_{4+5} (sometimes connected with anterior marginal spot). Cell br with 2 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 small hyaline spot near anterior end of crossvein dm-m less than half width of cell r_{4+5}, with 4-5 hyaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with marginal spot in cell r_{2+3}, and 1 small marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 5 preapical spots. Cell m_1 with 3 marginal hyaline spots and 2-3 anterior spots. Cell m_4 with 5-6 anterior spots, sometimes diffuse and 3 marginal or submarginal hyaline

spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish in female).

Abdomen: Ground color dark brown to black, with gray microtrichia. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape brown, length 1.22–1.26 mm, oviscape length to thorax length ratio 0.95–1.08; with evenly distributed acuminate brown setulae. Eversible membrane (Figs. 69–70) length 0.92–1.05 mm. Aculeus (Figs. 92–93) pale brown, esclerozado, length 0.90–1.05 mm, in ventral view with tip pointed (Figs. 116–117). Spermathecae brown, elongate, length 0.15–0.19 mm, surface with papillae (Figs. 140–141).

Male terminalia: Epandrium in posterior view (Fig. 164) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, with apex bluntly truncate, setulose except apically (Figs. 164), in lateral view with dorsal lobe serrate (Fig. 192). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 164); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with spines on laterally and ventrally of preglans, a group of more of 10 spines each (Fig. 220). Glans with acrophallus elongate, length 0.44–0.46 mm, apically with sclerotized tube.

Distribution. Highland areas of Costa Rica (San José) and central Mexico (Morelos). Elevational records range from 1500-3900 m.

Biology. This species has been reared from flowerheads of *Barkleyanthus salicifolius* (Kunth) H. Robins. & Brett. and *Erechtites valerianifolia* (Link ex Wolf) Less. ex DC.

Type data. The holotype male is labeled “MEXICO: Mexico: Parque Popo-Izta, Estacion Tlamacas, 3900 m, 13.VIII.1989, A. L. Norrbom” / “reared ex. flowers of *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1)” / “USNMENT00119018” [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the IEXA. Paratypes: **COSTA RICA. San José:** Zurquí de Moravia, 10°3'N 84°1'W, 1500 m, reared from flowerheads of *Erechtites valerianifolia* (Link ex Wolf) Less. ex DC., Apr 2006, P. Hanson, 5m 2f 4p (USNM USNMENT00212533–40). **MEXICO. Morelos:** Parque Iztaccíhuatl-Popocatépetl, (Amecameca - Cholula), Rt 451, 3900 m, reared ex flowers of *Barkleyanthus salicifolius* (H.B.K.) H. Robins. & Brett. (89M1) [Asteraceae], 13 Aug 1989,

A. L. Norrbom, 4m 6f (USNM/IEXA USNMENT00118378–79, USNMENT00119005–06, USNMENT00119008, USNMENT00119010, USNMENT00119017, USNMENT00119041, USNMENT00119047).

Campiglossa n. sp. 8

Figs. 32–33, 71, 94, 118, 142, 165, 193, 221

Diagnosis. This species differs from all of its neotropical congeners by having eversible membrane with 8-10 large denticles (Fig. 71). This species differs from all of its neotropical congeners except *C. despecta* and *Campiglossa* n. sp. 20 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 221). The distribution of spines of distiphallus are similar in *Campiglossa* n. sp. 8 and *Campiglossa* n. sp. 20 (Figs. 221, 233). It differs from *C. despecta* in having distiphallus with 2 rows of spines, long, strong and same size, in both sides of preglans (Fig. 208).

Description. Body length 2.67–3.57 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.73–0.76 mm) than long (0.47–0.54 mm), 0.64–0.68 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish, extends to anterior orbital setae. Frons length (0.37–0.40 mm) less than width at vertex (0.45–0.47 mm), slightly narrowed to anterior margin (0.32–0.34 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.21–0.24. Eye ovoid, long diameter 0.56–0.61 mm, width 0.47–0.51 mm, ratio 0.83–0.84. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.18–0.20 mm, width 0.11–0.15 mm, ratio 0.65–0.83.

Thorax: Length 1.13–1.24 mm. Ground color dark brown; scutum usually with 5 yellowish vittae, lateral vitta extended to scutellum; scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta

lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.03–3.14 mm, width 1.19–1.22 mm. Pattern reticulate. Both sexes (Figs. 32–33) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. (Figs. 32–33). Cell r_1 with 3 large marginal hyaline spots which touch the veins C and R_{2+3} (1 specimen with two hyaline spots on right wing). Cell r_{2+3} with 2-3 small, weak, diffuse hyaline basal marks, medially usually with 2-3 large hyaline spot obliquely aligned with large spot in r_1, with 1-4 small hyaline spots subapically, 1 anterior marginal hyaline spot closer to vein R_{2+3} and 1 submaginal hyaline spot touching vein R_{4+5} (usually connected with anterior marginal hyaline spot). Cell br with 3-4 large hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}, with 3-4 hyaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with marginal spot in cell r_{2+3}, and 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 3 preapical spots. Cell m_1 with 3 marginal hyaline spots and 1 large anterior spot. Cell m_4 with 5 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape dark brown, bright, length 1.00–1.12 mm, oviscape length to thorax length ratio 0.84–0.90; with evenly distributed brown setulae. Eversible membrane (Fig. 71) length 0.93–0.98 mm, with 8-10 large denticles. Aculeus (Fig. 94) pale brown, length 0.93–0.97 mm, in ventral view with tip slightly elongated pointed (Fig. 118). Spermathecae brown, length 0.17–0.18 mm, surface with papillae (Fig. 142).

Male terminalia: Epandrium in posterior view (Fig. 165) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view short, strongly

medially curved and with apex bluntly truncate (Fig. 165), in lateral view with dorsal lobe serrated (Fig. 193). Medial surstylus with pair of apical prensisetae; prensiseta medial elongated and lateral conical, lateral prensiseta half size of medial (Fig. 165); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with 2 rows of long spines on both lateral sides of preglans. Glans with acrophallus elongate, length 0.39–0.42 mm. (Fig. 221), apically with sclerotized tube.

Distribution. Highland Guatemala (Huehuetenango). The type series was collected at 3020 m elevation.

Biology. This species has been reared from flowerheads of *Senecio warszewiczii* A. Braun & Bouché.

Type data. The holotype male is labeled "GUATEMALA: Huehuetenango: Chiantla - Sierra de los Cuchumatanes road, just below mirador, 15.39907°N" / "91.43994°W 3020m, reared ex flowerheads of *Senecio warszewiczii* (07G66) coll. 25 Nov 2007emerged 29 Nov - 10 Dec 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, F. Camposeco, waypt. 94" / "USNMENT00670837" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the USNM. Paratypes: **GUATEMALA: Huehuetenango**: Chiantla - Sierra de los Cuchumatanes road, just below mirador, 15.39907°N 91.43994°W, 3020 m, emerged 29 Nov - 10 Dec 2007, reared ex flowerheads of *Senecio warszewiczii* (07G66), collected 25 Nov 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, F. Camposeco, 12m 5f (USNM/FSCA/UVG USNMENT00670790–99, USNMENT00670813, USNMENT00670816–17, USNMENT00670822, USNMENT00670826, USNMENT00670829, USNMENT00670840).

Campiglossa n. sp. 9

Figs. 34–35, 72, 95, 119, 143, 166, 194, 222

Diagnosis. This species differs from all of its neotropical congeners having abdomen black, bright; tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black; distiphallus with a cluster of large spines in both lateral sides of preglans, more of 15 spines each (Fig. 222). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 21 in having sternite 5 with 4-6 large acuminate setae in posterior margin. It differs from *Campiglossa* n. sp. 21 in having distiphallus with strong and long spines on both lateral sides of preglans, a group of 5-8

spines each side; glans with acrophallus elongate, with sclerotized tube apically (Fig. 234). This species differs from all of its neotropical congeners except *C. despecta*, *C. luculenta*, *C. taenipennis*, *Campiglossa* n. sp. 5 and *Campiglossa* n. sp. 17 in having the spermathecae elongated. It differs from *C. despecta* in having distiphallus with 2 rows of spines, long, strong and same size, in both sides of preglans (Fig. 208). It differs from *C. luculenta* in having distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It differs from *C. taenipennis* in having distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 17 in having distiphallus with 2 cluster of 7-8 spines each sides of preglans (Fig. 230).

Description. Body length 2.84–3.60 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.78–0.86 mm) than long (0.53–0.57 mm), 0.66–0.68 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.36–0.44 mm) less than width at vertex (0.44–0.48 mm), slightly narrowed to anterior margin (0.25–0.29 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow and brown to black setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.15–0.17. Eye ovoid, long diameter 0.63–0.74 mm, width 0.50–0.53 mm, ratio 0.72–0.79. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.19–0.21 mm, width 0.13–0.15 mm, ratio 0.60–0.79.

Thorax: Length 1.07–1.22 mm. Ground color dark brown; half basally scutum grayish microtrichose and apically brown microtrichose bright, extended to scutellum; scutellum brown. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta more than half or half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.00–3.20 mm, width 1.16–1.22 mm. Pattern reticulate. Both sexes (Figs. 34–35) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4.

Pterostigma brown with subapical marginal orange spot, with broad area brown between pterostigma and vein M_1. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m; brown area posterior to it in cell r_1 and cell r_{2+3} without hyaline spots. Cell r_1 with 3 large marginal hyaline spots, third spot smaller (sometimes with small hyaline mark between first and second spots). Cell r_{2+3} medially usually with 3 large hyaline spots obliquely aligned with proximal 3 large spots in r_1, 1 anterior marginal or submarginal hyaline spot, usually closer to apex of R_{2+3}. Cell br with 1 large hyaline spot basally and 2 minute medially, distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than half width of cell r_{4+5}, and 1 large spot anteriolly (sometimes 2 small spots between large spots), 2 hyaline spots subbasally, 2 preapical spots aligned with marginal spot in cell r_{2+3}, and 1 large marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm with 5-7 hyaline spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 4 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color black, bright. Tergites with setulae lanceolate, white to yellow only in tergete 1+2 and both lateral sides each tergite, centrally and sublaterally with setulae acuminate, dark brown, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 0.80–0.82 mm, oviscape length to thorax length ratio 0.73–0.76; with evenly distributed brown setulae. Eversible membrane (Fig. 72) length 0.71–0.74 mm. Aculeus (Fig. 95) pale brown, esclerozado, length 0.74–0.75 mm, in ventral view with tip pointed, extreme apex slightly broader than preapical width (Fig. 119). Spermathecae brown, elongate, length 0.17–0.18 mm, surface with papillae (Fig. 143).

Male terminalia: Epandrium in posterior view (Fig. 166) inverted U-shaped, with large setulae and microtrichia distributed evenly. Lateral surstylus in posterior view strongly medially curved, setulose except apically, in lateral view with small dorsal lobe (Fig. 194). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 166); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with large spines on both lateral sides of preglans, more of 15 spines each (Fig. 222). Glans with acrophallus short, length 0.23–0.27 mm.

Distribution. Highland areas of the Dominican Republic (Barahona, Independencia, La Veja, Peravia). Elevational records range from 1230-2200 m.

Biology. This species has been reared from flowerheads of *Senecio vulgaris* L.
Type data. The holotype male is labeled "DOMINICAN REPUBLIC: Independencia. Sierra de Neiba near crest, 5.5km NNW Angel Feliz 18-41N, 71-47W. 1750 m" / "21-22 July 1992 J. Rawlins, S. Thompson, C. Young, R. Davidson dense cloud forest" / "CMP" / "USNMENT01232014" [plastic bar code label]. It is double mounted (triangle paper), is in excellent condition, and is deposited in the CMP. Paratypes: same data as holotype, 1m 6f (CMP USNMENT00119966–67, USNMENT01232005, USNMENT01232007–09, USNMENT01232013). **DOMINICAN REPUBLIC**: **Barahona:** Eastern Sierra Bahoruco, Reserva Cachote, 12.8 km NE Paraiso, 180554°N 711121°W, 1230 m, 19-21 May 2004, C. Young, C. Nunes, J. Rawlins J. Fetzner., 1m (USNMENT01232006). **Independencia:** Sierra de Neiba at crest, 5.5 km NNW Angel Feliz 18-41N, 71-47W, 1850 m, 1-5 Dec 1991, L. Masner & S. Peck, 7f (USNM USNMENT00119072–78); **La Vega:** La Guardarraya, Mons. Nouel-Constanza RD., 2000 m, 27 Dec 1955, J. Malconado - Capriles, 5m 2f (USNMENT00119082, USNMENT00118394–95, USNMENT00119123, USNMENT00119128, USNMENT00119131–32); Valle Nuevo, 18°46.258'N 70°40.564'W, 2200 m, 27 Dec 1955, J. Malconado - Capriles, 8m (USNM USNMENT00119124–27, USNMENT00119129–30, USNMENT00119133-34); La Guardarraya, Mons. Nouel-Constanza RD., 1850 m, 18 Jul 1987, A. L. Norrbom, 2f (USNM USNMENT00119079–80). **Peravia:** Arroyo La Morita 33 km, N San Jose de Ocoa, 18°39'N 70°35'W, 1470 m, 24 March 1984, F. Harrington, J. D. Weintraub, N. E. Woodley, 1f (USNM USNMENT00119081).

***Campiglossa* n. sp. 10**
Figs. 36, 167, 195, 223

Diagnosis. This species differs from all of its neotropical congeners in having second anepisternal seta acuminate, black; lateral surstylus with dorsal lobe reduced (Fig. 195). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 11 and *Campiglossa* n. sp. 13 in having proctiger with setae very dense and staut (Fig. 167). It differs from *Campiglossa* n. sp. 11 in having distiphallus with 4 large spines on laterally and ventrally (Fig. 224) and scutellum yellowish apically. It differs from *Campiglossa* n. sp. 13 in having lateral surstylus with apice curved posteriorly (Fig. 198). This species differs from all of its neotropical congeners except *C. taenipennis*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 12, *Campiglossa* n. sp. 18, *Campiglossa* n. sp. 20 and *Campiglossa* n. sp. 21 in having cell r_{2+3} with 2 marginal rouded hyaline spots (Figs. 36–37). It differs from *C. taenipennis* in

having distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212) and aculeus all yellowish (Fig. 84). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 12 in having lateral surstylus with serrated dorsal lobe, distinct alongated (Fig. 197). It differs from *Campiglossa* n. sp. 18 in having distiphallus with spines on both lateral sides of preglans, on one side 1 conical large spine, on other with 2 conical large spines (Fig. 231). It differs from *Campiglossa* n. sp. 20 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 233). It differs from *Campiglossa* n. sp. 21 in having distiphallus with strong and long spines on both lateral sides of preglans, a group of 5-8 spines each side (Fig. 234).

Description. Body dark brown in ground color, mostly silver microtrichose. Setae dark brown to black.

Head: Slightly higher (0.98 mm) than long (0.64 mm), 0.63 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.46 mm) less than width at vertex (0.62 mm), slightly narrowed to anterior margin (0.49 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.39. Eye ovoid, long diameter 0.71 mm, width 0.54 mm, ratio 0.76. Antenna yellow; first flagellomere longer than wide, long diameter 0.25 mm, width 0.18 mm, ratio 0.72.

Thorax: Length 1.40 mm. Ground color dark brown; scutellum all brown. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow. Scutellum with 2 pairs of acuminate setae, apical seta half as long as basal seta. Second anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.70 mm, width 1.41 mm. Pattern reticulate (Fig. 36). Basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m small. Pterostigmal brown

area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 3 large marginal hyaline spots. Cell r_{2+3} medially usually with 2 larger hyaline spots obliquely aligned with proximal 2 large spots in r_1, 5 minute preapical hyaline spots and 2 marginal hyaline spots, anterior touching vein R_{2+3} and posterior near vein R_{4+5}. Cell br with 3-4 hyaline spots distal to crossvein bm-m, the least, small not reaching vein R_{4+5}. Cell r_{4+5} with 1 hyaline spot near anterior end of crossvein dm-m less than half width of cell r_{4+5} (sometimes connected with anterior hyaline spot), with 3-4 hyaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with anterior marginal spot in cell r_{2+3}, and 1 small marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm with 6-8 hyaline spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 3-4 anterior spots (sometimes connected). Cell m_4 with 5-6 anterior spots and 3-4 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Male terminalia: Epandrium in posterior view (Fig. 167) inverted U-shaped, with setulae and microtrichia distributed evenly in dorsally and laterally. Lateral surstylus in posterior view short, strongly medially curved and with apex bluntly truncate, with distributed setulae, except in apex (Fig. 167), in lateral view with dorsal lobe reduced (Fig. 195). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta less half size of medial (Fig. 167); medial prensiseta on dorsal lobe. Proctiger elongate, with microtrichia distributed evenly, and with strong setulae in laterally and ventrally area. Distiphallus with very short spines in preglans (Fig. 223). Glans with acrophallus elongate, length 0.48 mm, apically with sclerotized tube.

Distribution. Highland central Mexico (Mexico). The holotype was collected at 3900 m elevation.

Biology. This species has not been reared. The holotype was collected sweeping *Senecio mairetianus* DC.

Type data. The holotype male is labeled “MEXICO: Mexico, Parque Popo-Izta, Estacion Tlamacas, 3900 m, 13. VIII. 1989, A. L. Norrbom” / “Sweeping Senecio mairetianus DC.

(89M15)" / "USNMENT00120052" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the IEXA.

***Campiglossa* n. sp. 11**

Figs. 38–39, 73, 96, 120, 144, 168, 196, 224

Diagnosis. This species differs from all of its neotropical congeners having distiphallus with 4 long spines on laterally and ventrally; glans with acrophallus elongate (length 0.44–0.46 mm), apically with sclerotized tube (Fig. 224). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 10 and *Campiglossa* n. sp. 13 in having the proctiger with setae very dense and stout and lateral surstylus with dorsal lobe reduced (Fig. 224). It differs from *Campiglossa* n. sp. 10 in having the second anepisternal seta acuminate (black); wing with 2 marginal hyaline spots in cell r_{2+3} and a very small spot in cell r_{4+5}. It differs from *Campiglossa* n. sp. 13 in having the lateral surstylus in lateral view with the apex curved posteriorly.

Description. Body length 3.53–4.88 mm, dark brown in ground color, gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.86–1.13 mm) than long (0.63–0.86 mm), 0.73–0.76 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish whith extends to orbital anterior seta. Frons length (0.53–0.69 mm) less than width at vertex (0.57–0.65 mm), slightly narrowed to anterior margin (0.44–0.55 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.34–0.46. Eye ovoid, long diameter 0.59–0.69 mm, width 0.48–0.61 mm, ratio 0.81–0.88. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.19–0.25 mm, width 0.15–0.17 mm, ratio 0.68–0.79.

Thorax: Length 1.37–1.60 mm. Ground color dark brown; scutum usually with 3 yellowish vittae, lateral vitta extended to scutellum; scutellum brown at base, yellowish apically. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark

brown to black.

Wing: Length 4.30–5.00 mm, width 1.50–1.80 mm. Pattern reticulate. Both sexes (Figs. 38–39) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots (same times with spots on female), in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Cell r_1 with 3 marginal hyaline spots (1 specimen with fourth spots). Cell r_{2+3} between base and crossvein r-m with row 3-4 hyaline spots along vein R_{4+5}, 3 large hyaline spots aligned with largest spot in cell r_1, 3 small preapical hyaline spots, 1 submarginal hyaline spot touching vein R_{4+5} and 1 marginal hyaline spot, touching vein R_{2+3} (usually submarginal and marginal spots connected). Cell br with 3-4 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than ⅔ width of cell r_{4+5}, with 3-5 hyaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with anterior marginal and submarginal spots in cell r_{2+3} (usually 1-2 small hyaline spots between preapical and apical hyaline spots), and 1 marginal apical hyaline spot between vein R_{4+5} and M_1.Cell dm mostly hyaline basally and 4-6 preapical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 3-4 irregular anterior spots. Cell m_4 with 5-6 anterior spots and 3-4 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area (sometimes with middle femur yellowish).

Abdomen: Ground color dark brown, with gray microtrichia. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape dark brown, length 1.43–1.60 mm, oviscape length to thorax length ratio 0.96–0.99; with evenly distributed brown setulae. Eversible membrane (Fig. 73) length 1.24–1.34 mm. Aculeus (Fig. 96) all pale brown, esclerotized, length 1.16–1.24 mm, in ventral view with tip pointed (Fig. 120). Spermathecae brown, elongate, length 0.19 mm, surface with papillae (Fig. 144).

Male terminalia: Epandrium in posterior view (Fig. 168) inverted U-shaped, with setulae and microtrichia distributed evenly, in lateral view with dorsal lobe reduced (Fig. 196). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 168). Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with 4 large spines on laterally and ventrally (Fig. 224). Glans with

acrophallus elongate, length 0.44–0.46 mm (Fig. 224), apically with sclerotized tube.

Distribution. Highlands of Ecuador (Pichincha), central Mexico (Michoacán, Veracruz), and Panama (Chiriqui). Elevational records from label data of the examined specimens range from 2545-3100 m.

Biology. This species has not been reared. Most of the type series was collected sweeping *Senecio cinerarioides* Kunth.

Type data. The holotype male is labeled "MEXICO: Michoacán: 6-8 km N Angangueo, 7.X.1991, A. L. Norrbom" / "collected on *Senecio cinerarioides* HBK. (91M22C)" / "USNMENT00119071". [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the IEXA. Paratypes: **PANAMA: Chiriqui**: Bambito, 7 Jan 1978, W. N. Mathis, 1f (USNM USNMENT00118900). **MEXICO: Michoacán:** Angangueo, 19°37'N 100°18'W, 3900 m, on *Senecio cinerarioides* H. B. K. (91M22C) [Asteraceae], 7 Oct 1991, A. L. Norrbom, 2m 1f (USNM USNMENT00118930, USNMENT00119070). **Veracruz:** road to Estación Microondas Las Lajas from Las Vigas de Ramirez, km 14-16, 19°35'N 97°5'W, 3000-3100 m, sweeping *Senecio cinerarioides* H.B.K. (89M17) [Asteraceae], 19 Aug 1989, A. L. Norrbom & J. Valenzuela, 1m 1f (USNM USNMENT00118400–01).

***Campiglossa* n. sp. 12**

Figs. 40, 169, 197, 225

Diagnosis. This species differs from all of its neotropical congeners having lateral surstylus with serrated dorsal lobe, distinct alongated (Fig. 197); wing of male all hyaline reticulate, with evenly distributed spots (Fig. 40); preglans with 6 large conical spines dorsally (Fig. 225). This species differs from all of its neotropical congeners except *C. hyalina* in having lateral surstylus with dense posterodorsal cluster of setae (Fig. 169). It differs from *C. hyalina* in having wing of male with broad dark brown area posterior pterostigma, extended apically in cell r_1 with 1 apical spot. This species differs from all of its neotropical congeners except *C. taenipennis*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 10, *Campiglossa* n. sp. 18, *Campiglossa* n. sp. 20 and *Campiglossa* n. sp. 21 in having cell r_{2+3} with 2 marginal rouded hyaline spots (Fig. 40). It differs from *C. taenipennis* in having distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212); aculeus all yellowish (Fig. 84). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of

5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 10 in having second anepisternal seta acuminate, black. It differs from *Campiglossa* n. sp. 18 in having distiphallus with spines on both lateral sides of preglans, on one side 1 conical large spine, on other with 2 conical large spines (Fig. 231). It differs from *Campiglossa* n. sp. 20 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 233). It differs from *Campiglossa* n. sp. 21 in having distiphallus with strong and long spines on both lateral sides of preglans, a group of 5-8 spines each side (Fig. 234).

Description. Body length 2.25–2.32 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.61–0.66 mm) than long (0.45–0.48 mm), 0.72–73 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.32–0.34 mm) less than width at vertex (0.35–0.39 mm), slightly narrowed to anterior margin (0.25–0.28 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.41. Eye ovoid, long diameter 0.52 mm, width 0.37–0.42 mm, ratio 0.71–0.80. Antenna yellow to orange, first flagellomere longer than wide, long diameter 0.13–0.16 mm, width 0.10–0.11 mm, ratio 0.68–0.76.

Thorax: Length 0.88–0.96 mm. Ground color dark brown; scutellum brown. Mesonotum gray microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 2.37–2.70 mm, width 0.91–1.07 mm. All wing predominantly hyaline reticulate with large hyaline spots (Fig. 40). Pterostigma brown with subapical orange spot. Pterostigmal brown area not extending into cell r_1 along costa. Cell r_1 with basal area hyaline, 1 spot aligned with orange spot to pterostigma, 3 large marginal hyaline spots. Cell r_{2+3} basally hyaline, hyaline spot near anterior end of crossvein r-m large, crossing cell, 2 hyaline spots obliquely aligned with large spot in r_1, 2 preapical hyaline spots, 1 submarginal hyaline spot touching vein R_{4+5} and 2 marginal hyaline spots, anterior touching vein R_{2+3} (usually

submarginal and anterior marginal spots connected) and posterior touching vein R_{4+5}. Cell br with 3-4 large hyaline spots distal to crossvein bm-m. Cell r_{4+5} reticulate with two rows of hyaline spots, 4-5 closer to vein R_{4+5} and 4-5 closer to vein M_1; 1 apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 4-6 preapical spots. Cell m_1 with 3 marginal hyaline spots, with 1 large anterior spot. Cell m_4 with 3 marginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin (slightly increasing in size posteriorly) of all but last tergite, male tergite 5 with row of large acuminate, pale brown setae. Sternite 5 with posterior margin concave (inverted V-shape).

Male terminalia: Epandrium in posterior view (Fig. 169) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically (Fig. 169), with distinct dense cluster of setae posterodorsal (Fig. 169), in lateral view with serrated dorsal lobe, distinct alongated (Fig. 197). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 169); medial prensiseta on dorsal lobe. Proctiger elongate, with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines dorsally, with 6 large conical spines. Glans with acrophallus short 0.26 mm (Fig. 225).

Distribution. Highlands of southern Mexico (Chiapas). The type series was collected at 2133 m elevation.

Biology. No host plant information is known for this species.

Type data. The holotype male is labeled “MEX. Chis. 7mi SE. San Cristobal 26.V.69 7000′ H. J. Teskey” / “USNMENT01232020” [plastic bar code label]. Glued on pin, is in fair condition, and is deposited in the CNC. Paratypes: **MEXICO: Chiapas:** 11.2 km SE. San Cristobal de Las Casas, 26.V.69 7000′ H. J. Teskey 2m (CNC/USNM USNMENT01355071, USNMENT01232019); same, 28 V.69 7000′ H. J. Teskey, 1 m (USNMENT01232020).

***Campiglossa* n. sp. 13**

Figs. 55, 180, 209, 238

Diagnosis. This species differs from all of its neotropical congeners having lateral surstylus with apice curved posteriorly (Fig. 198). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 10 and *Campiglossa* n. sp. 11 in having proctiger with setae very dense and staut and dorsal lobe reduced (Fig. 198). It differs from *Campiglossa* n. sp. 10 in having second anepisternal seta acuminate, black; wing with 2 marginal hyaline spots in cell r_{2+3} and a very small spot in cell $r_{4+5.}$ It differs from *Campiglossa* n. sp. 11 in having distiphallus with 4 large spines on laterally and ventrally (Fig. 224); scutellum yellowish apically.

Description. Body dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.90 mm) than long (0.69 mm), 0.76 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish. Frons length (0.56 mm) less than width at vertex (0.62 mm), slightly narrowed to anterior margin (0.49 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.41. Eye ovoid, long diameter 0.62 mm, width 0.51 mm, ratio 0.82. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.22 mm, width 0.15 mm, ratio 0.68.

Thorax: Length 1.26–1.53 mm. Ground color dark brown; scutellum all brown. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.85 mm, width 1.41 mm. Pattern reticulate (Fig. 41). with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than

length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 3 large marginal hyaline spots. Cell r_{2+3} medially usually with 3 large hyaline spots obliquely aligned with proximal 2 large spots in r_1, 2 minute preapical hyaline spots, 1 submarginal hyaline spot touching vein R_{4+5} and 1 marginal hyaline spot touching vein R_{2+3} (usually submarginal and marginal spots connected). Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than ⅔ width of cell r_{4+5}, with 3 hyaline spots subbasally, 2 preapical spots aligned with anterior marginal and submarginal spots in cell r_{2+3} (usually 1 small hyaline spots between preapical and apical hyaline spots), and 1 small marginal apical hyaline spot between vein R_{4+5} and M_1.Cell dm with 5-6 hyaline spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 5-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Male terminalia: Epandrium in posterior view (Fig. 170) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically (Fig. 170), in lateral view with dorsal lobe reduced (Fig. 198). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 170); medial prensiseta on dorsal lobe. Proctiger elongate, with microtrichia distributed evenly, and with strong setulae in laterally and ventrally area. Distiphallus with spines on both lateral sides of preglans, on one side a group of 5 small spines, on other with 3 small spines (Fig. 226). Glans with acrophallus elongate, length 0.49 mm, apically with sclerotized tube.

Distribution. Highland central Mexico (Veracruz). The holotype was collected between 2700-3000 m elevation.

Biology. No host plant information is known for this species.

Type data. The holotype male is labeled “MEXICO: Veracruz, road to Estacion Microondas Las Lajas (from las Vigas de” / “Ramirez), 2700-3000 m, km 9, 19.VIII.1989, A. L. Norrbom & J. Valenzuela” / “USNMENT00118778” [plastic bar code label]. It is double mounted (minuten), is in excellent condition, and is deposited in the IEXA.

***Campiglossa* n. sp. 14**

Figs. 42–43, 74, 98, 122, 146, 171, 199, 227

Diagnosis. This species differs from all of its neotropical congeners in having aculeus tip bilobed (middle lobe with small notch) (Fig. 122); distiphallus with spines on both lateral sides of preglans, on one side 2 conical spines, on other with 3 conical spines (Fig. 227). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 2 and *C. pallidipennis* by the absence of marginal apical hyaline rounded spot in cell r_{4+5} (Figs. 42–43). It differs from *Campiglossa* n. sp. 2 in having wing with broad brown band between pterostigma and apical vein M_4 (more expressive in males); wing with a subapical row of large spots (2 in cell r_{2+3}, 2 in r_{4+5} and 1 in m_1) forming a line (Figs. 19–20). It differs from *C. pallidipennis* in having wing with pattern hyaline to light brown (Figs. 11–12) and thorax with microtrichia entirely yellow to golden.

Description. Body length 2.44–2.67 mm, dark brown in ground color, gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.76–0.90 mm) than long (0.48–0.57 mm), 0.64–0.63 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.38–0.46 mm) less than width at vertex (0.48–0.53 mm), slightly narrowed to anterior margin (0.34–0.42 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.17–0.21. Eye ovoid, long diameter 0.57–0.69 mm, width 0.40–0.46 mm, ratio 0.67–0.70. Antenna yellow to brown, first flagellomere, longer than wide, long diameter 0.17–0.21 mm, width 0.13–0.15 mm, ratio 0.71–0.74.

Thorax: Length 1.15–1.43 mm. Ground color dark brown; scutum usually with 5 yellowish to brown vittae, sublateral vitta extended to scutellum; scutellum brown, gray microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.03–3.36 mm, width 1.28–1.51 mm. Pattern reticulate. Both sexes (Figs. 42–43) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4.

Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots (some times with 1-2 small spot on female), in cell r_{2+3} with hyaline spots, with spot near anterior end of crossvein r-m small, not crossing cell. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 3 marginal hyaline spots (sometimes with 2 marginal hyaline spots and 2 smaller preapicais). Cell r_{2+3} basally hyaline, with 2-3 large hyaline spots aligned with largest spot in cell r_1, 2-4 subapical small hyaline spots, 1 submarginal hyaline spot touching vein R_{4+5} and 1 marginal hyaline spot, touching vein R_{2+3} (usually submarginal and marginal spots connected)Cell br with 3-4 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with hyaline spots distributed in 2 rows, one along vein R_{4+5} and other along vein M_1, 2 preapical spots aligned with submarginal spot in cell r_{2+3}, without marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm mostly hyaline basally and 3-5 preapical spots. Cell m_1 usually with 3 round marginal hyaline spots and 1 large anterior spot. Cell m_4 with 5-7 anterior spots (sometimes diffuse and/or fused into irregular mark) and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted V-shape).

Female terminalia: Oviscape brown, length 0.88–0.96 mm, oviscape length to thorax length ratio 0.64; with evenly distributed brown setulae. Eversible membrane (Fig. 74) length 0.91 mm. Aculeus (Fig. 98) all pale brown, length 0.88 mm; in ventral view with tip with 4 lobes, 2 subapical and 2 apical (Fig. 122). Spermathecae brown, elongate, length 0.15 mm, surface with papillae (Fig. 146).

Male terminalia: Epandrium in posterior view (Fig. 171) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view curved, setulose except apically (Fig. 171), in lateral view with dorsal lobe broad, with sharply serrate, margin usually with strong medial gap in serrations (Fig. 199). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 171). Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, on one side a group of 2 conical spines, on other with 3 conical spines (Fig. 127). Glans with acrophallus short, length 0.32

mm.

Distribution. Highland Peru (Cusco) and Venezuela (Distrito Federal). Elevational records range from 1600-3099 m.

Biology. This species has been reared from flowerheads of *Erigeron floribundus* (Kunth) Sch. Bip.

Type data. The holotype male is labeled "PERU: Cusco: Carretera Manu, near jct. with road to Caicay, WPB-32," / "13.58354°S 71.70835°W, 3099m, emerged 4- 28 Feb reared ex flowerheads of Conyza" / "floribunda (13-PE-03) collected 28 Jan 2013, A. L. Norrbom, G. J. Steck & B. D. Sutton" / "USNMENT00875888" [plastic bar code label]. It is double mounted (minuten), is in excellent condition, and is deposited in the MHNJP. Paratype:

VENEZUELA. Distrito Federal: Cumbre de Boquerón, Frente a Bajo Seco, 1600 m, 16 Apr 1972, 1f (USNM USNMENT00120046).

***Campiglossa* n. sp. 15**

Figs. 44, 172, 200, 228

Diagnosis. This species differs from all of its neotropical congeners in having the wing with faint hyaline marks (elongated weak) between pterostigma to crossvein r-m and apical cell r_{4+5}; cell r_{4+5} without marginal apical spot, but with subapical hyaline spot slinghtly longer than wide (Fig. 44); distiphallus with 6 large spines on both lateral sides of preglans (Fig. 228). This species differs from all of its neotropical congeners except *C. pallidipennis* in having the wing without rounded hyaline marks between the pterostigma to crossvein r-m. It differs from *C. pallidipennis* in having thorax with microtrichia entirely yellow to golden and preglans with 2 large spines in both sides of distiphallus (Fig. 211). This species differs from all of its neotropical congeners except *C. trinotata* and *Campiglossa* n. sp. 1 in having posterior orbital seta inclinate. It differs from *C. trinotata* in having male with broad dark brown area posterior to pterostigma, extended apically in cell r_1 with 3 large apical hyaline spots (Figs. 15–16). It differs from *Campiglossa* n. sp. 1 in having the distiphallus with a group of 5-8 spines on both lateral sides of preglans and apically sclerotized tube (Fig. 214) and cell r_1 with 3 marginal hyaline spots.

Description. Body length 3.76–3.82 mm, dark brown in ground color, gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.69–1.07 mm) than long (0.51–0.56 mm), 0.71–0.73 times as

high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.45–0.51 mm) less than width at vertex (0.56–0.64 mm), slightly narrowed to anterior margin (0.44–0.49 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, inclinate. Gena with few small lanceolate, white to yellow setulae dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.22–0.33. Eye ovoid, long diameter 0.68–0.81 mm, width 0.45–0.54 mm, ratio 0.66. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.17–0.22 mm, width 0.13–0.16 mm, ratio 0.72–0.76.

Thorax: Length 1.30–1.58 mm. Ground color dark brown; scutum gray microtrichose in anterior margin and yellowish microtrichose the posterior margin; scutellum brown. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.45–4.15 mm, width 1.35–1.72 mm. Pattern hyaline light brown (Fig. 44). With basal half predominantly hyaline reticulate from cells bc and c to preapical dm and apical m_4. Apical half predominantly darkened from pterostigma to apical cell r_{4+5}. Pterostigma brown with subapical area light brown. Cells r_1, r_{2+3} and r_{4+5} with elongated spots light brown basally and without rounded marginal hyaline spots. Cell br with 2 rows of small hyaline spots distal to crossvein bm-m, one touching vein R_{4+5} and other vein M_1 (hyaline spots usually connected). Cell dm with 2 rows of hyaline spots, one touching vein M_1 and other vein M_4 (hyaline spots usually connected). Cell m_1 with 3 small round submarginal hyaline spots and 1 anterior large spot. Cell m_4 with row of 6 hyaline spots touching vein M_4, and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Sometimes with brown spots on femur.

Abdomen: Ground color dark brown to black, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on lateral and posterior margin of all, with larger lanceolate setae on lateral each tergite, but last tergite, male tergite 5 with row of large acuminate, pale brown setae on lateral and posterior margin. Male sternite 5 with posterior margin concave (inverted V-shape).

Male terminalia: Epandrium in posterior view (Fig. 172) inverted U-shaped, with

setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically (Fig. 172), in lateral view with dorsal lobe undulated, usually broadest medially (Fig. 200). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 172); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, 6 large spines each side (Fig. 228). Glans with acrophallus short, length 0.25–0.28 mm.

Distribution. Highlands of central and northern Mexico (Guerrero, Hidalgo, Mexico, Nuevo Leon, Tamaulipas). Elevational records from label data of the examined specimens range from 2683-3140 m.

Biology. No host plant information is known for this species.

Type data. The holotype male is labeled "MEX: Tamaulipas 7 mi S Villagran XI-26-75" / "J. Powell J. Chemsak & T. Friedlander" / "J. A. Powell-J. A. Chemsak 1975 Mexican Expedition California Academy Sciences Ac cession 1976" / "USNMENT00119970" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the CAS. Paratypes: **MEXICO: Guerrero:** Tierra Colorada 19.3 km N, 5 august 1954, J. G. Chillcott, 1m (CAS USNMENT01232031); **Hidalgo**: Cerro Pelado, N.L. Mex., 2957-3140 m, 15-16 july 1965, H. & A. Howden, 1m (USNMENT01232029); Pachuca, 28 july 1954, 1m (USNM USNMENT01355061); **Mexico**: Toluca, 35.4 km N, 2683 m, 17 august 1954, J. G. Chillcott, 1m (CAS USNMENT01232028); Aculco 9.6 km N, 2012 m, 18 august 1954, J. G. Chillcott, 1m (CAS USNMENT01232030); **Nuevo León**: Cerro Potosi NW 18 de marzo, 3000 m, 27 june 1986 , M. Sorensson & B. Martensson, 1m (USNMENT01232027).

***Campiglossa* n. sp. 16**

Figs. 45–46, 76, 99, 123, 147, 173, 201, 229

Diagnosis. This species differs from all of its neotropical congeners in having distiphallus with 3 large conical spines on both lateral sides of preglans (Fig. 229); cell r_{4+5} of male with 2 rows small spots subbasally, aligned with veins R_{4+5} and M_1 (Fig. 45). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 4, *Campiglossa* n. sp. 9 and *C. despecta* in having cell r_{2+3} with only 1 large apical hyaline spot on female between veins R_{2+3} and R_{4+5} (without additional subapical spot). It differs from *Campiglossa* n. sp. 4 in having the distiphallus with 2 groups of spines on both lateral sides of preglans and glans with apical tube tapered (Fig. 217). It differs from *Campiglossa* n. sp. 9 in having abdomen black, bright;

tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black. It differs from *C. despecta* in having distiphallus with 2 rows of spines, long, strong and same size, in both sides of preglans (Fig. 208).

Description. Body length 3.12–3.79 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.85–0.88 mm) than long (0.53–0.54 mm), 0.61–0.62 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish. Frons length (0.45 mm) less than width at vertex (0.52–0.54 mm), slightly narrowed to anterior margin (0.44–0.45 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, brown setulae dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.24–0.25. Eye ovoid, long diameter 0.66–0.68 mm, width 0.49–0.51 mm, ratio 0.74–75. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.22 mm, width 0.17–0.18 mm, ratio 0.77–0.81.

Thorax: Length 1.36–1.42 mm. Ground color dark brown; scutum gray microtrichose in anterior margin and brown microtrichose the posterior margin, with 5 brown vittae, lateral vitta extended to scutellum; scutellum brown. Mesonotum entirely microtrichose. Scutal setulae lanceolate, white to yellow, slightlyn increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta more than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.46–3.75 mm, width 1.46–1.62 mm. Pattern reticulate. Both sexes (Figs. 45–46) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 with small marks, area brown of pterostigma reaching cell br. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m (Figs. 45–46). Cell r_1 with hyaline spot basally, 2-3 small spots subasally and 3 large marginal hyaline spots. Cell r_{2+3} basally with 3-4 small, weak, diffuse hyaline basal marks, medially 2 large hyaline spots obliquely aligned with large spot in r_1, 2 small preapical hyaline spots, and 1 large marginal hyaline spot between vein R_{2+3} and R_{4+5}. Cell br with 4 small hyaline spots distal to crossvein bm-m, the least, two not reaching vein R_{4+5}. Cell r_{4+5}

with hyaline spots distributed in 2 rows, one along vein R_{4+5} and other along vein M_1, 2 preapical spots aligned with marginal spot in cell r_{2+3}, 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm with 6-7 hyaline spots. Cell m_1 with 3 marginal or submarginal hyaline spots, and 1 large anterior spot. Cell m_4 with 7-9 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow, femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 0.98–1.05 mm, oviscape length to thorax length ratio 0.70–0.76; with evenly distributed brown setulae. Eversible membrane (Fig. 76) length 1.00 mm. Aculeus (Fig. 99) all pale brown, length 0.90 mm, in ventral view tip rounded (Fig. 123). Spermathecae brown, elongate, length 0.16 mm, surface with papillae (Fig. 147).

Male terminalia: Epandrium in posterior view (Fig. 173) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view strongly medially curved, apex slightly broader than preapical width, setulose except apically (Fig. 173), in lateral view with dorsal lobe serrate, usually with teeth broadest medially (Fig. 201). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 173). Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with 3 large conical spines on both lateral sides of preglans (Fig. 229). Glans with acrophallus medium, length 0.37 mm.

Distribution. Highland southern Venezuela (Amazonas). The type series was collected at 2100 m elevation.

Biology. No host plant information is known for this species.

Type data. The holotype male is labeled “VENEZUELA, T. F. Amaz. Cerro de La Neblina Camp II, 2100 m. 0°50'N, 65°59'W 30 january 1985” / “Malaise trap at edge of open bog Bennetia Scrub W. E. Steiner Collr.” / “USNMENT00120050” [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the USNM. Paratypes: **VENEZUELA: Amazonas:** Cerro de La Neblina Camp II, 0°50' N 65°59'W, 2100 m, 30 jan 1985, W. E. Steiner, 1m 2f (USNM USNMENT00120074, USNMENT00120051).

***Campiglossa* n. sp. 17**

Figs. 47–48, 77, 100, 124, 148, 174, 202, 230

Diagnosis. This species differs from all of its neotropical congeners in having distiphallus with 2 cluster of 7-8 spines each side of preglans and glans with acrophallus elongate (length 0.51 mm) (Fig. 230). This species differs from all of its neotropical congeners except *C. despecta* in having the base of the aculeus as wide as the length of the tip (Fig. 100). It differs from *C. despecta* in having distiphallus with 2 rows of spines, long, strong and same size, in both sides of preglans (Fig. 208). This species differs from all of its neotropical congeners except *C. despecta*, *C. luculenta*, *C. taenipennis*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 9 in having the spermathecae elongated (Fig. 148). It differs from *C. luculenta* in having distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It differs from *C. taenipennis* in having the distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 9 in having abdomen black, bright; tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black.

Description. Body length 2.52–3.06 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.73–0.83 mm) than long (0.55–0.56 mm), 0.67–0.75 times as high as long. Mostly yellow, ocellar tubercle brown, occiput mostly black except dorsally, face and parafacial whitish, extends to first frontal setae. Frons length (0.37–0.40 mm) less than width at vertex (0.45–0.51 mm), slightly narrowed to anterior margin (0.34–0.39 mm). Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.20. Eye ovoid, long diameter 0.59–0.69 mm, width 0.42–0.52 mm, ratio 0.71–0.75. Antenna yellow; first flagellomere longer than wide, long diameter 0.17–0.19 mm, width 0.13–0.14 mm, ratio 0.73–0.76.

Thorax: Length 1.07–1.36 mm. Ground color dark brown; scutum usually with 3 yellowish vittae weak; scutellum brown at base, yellowish apically. Mesonotum entirely gray

microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.13–3.76 mm, width 1.20–1.45 mm. Pattern reticulate. Both sexes (Figs. 47–48) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with 1 basal hyaline spot and 3 large marginal hyaline spots, crossing cell. Cell r_{2+3} basally with 3 spots, 2 large hyaline spots aligned with largest spot in cell r_1, 2-3 small subapical spots, 1 submarginal hyaline spot closer to vein R_{4+5} (sometimes connected with anterior marginal spot), and1 apical marginal hyaline spot closer to apex of R_{2+3}. Cell br with 3 hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than ⅔ width of cell r_{4+5}, with 3-4 hyaline spots subbasally, sometimes diffuse and/or fused into irregular mark, 2 preapical spots aligned with marginal and submarginal spots in cell r_{2+3}, and 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 4 preapical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 4-5 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Sometimes with extreme apex of femur brown to black.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape brown to dark brown, length 0.96 mm, oviscape length to thorax length ratio 0.70; with evenly distributed brown setulae. Eversible membrane (Fig. 77) length 0.78 mm. Aculeus (Fig. 100) all pale brown, length 0.79 mm, in ventral view with tip rounded (Fig. 124). Spermathecae brown, elongate, length 0.20 mm, surface with papillae (Fig. 148).

Male terminalia: Epandrium in posterior view (Fig. 174) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially

curved, and with apex bluntly truncate, setulose except apically (Fig. 174), in lateral view with dorsal lobe serrate, usually broadest medially (Fig. 202). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 174); medial prensiseta on dorsal lobe. Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, 2 clusters of spines on each (7-8 spines) (Fig. 230). Glans with acrophallus elongate, length 0.51 mm, apically with sclerotized tube.

Distribution. Highlands of central Mexico (Distrito Federal, Morelos). One paratype was collected at 3900 m elevation.

Biology. This species has been reared from flowerheads of *Barkleyanthus mairetianus* DC., *Roldana lanicaulis* (Greenm.) H. Rob. & Brettell., and *Senecio sanguisorbae* DC.

Type data. The holotype male is labeled "MEXICO: Morelos: Lago de Zempoala, 23-25.IX.1991, A.L.Norrbom" / "reared ex. capitulae of *Roldana lineolata* (DC) R.& B.(91M11)" / "USNMENT00120041" [plastic bar code label]. It is double mounted (minuten), is in fair condition (without right wing), and is deposited in the IEXA. Paratypes: **MEXICO: Distrito Federal:** Rt. 95 btw. km 42-43, 1 km N La Cima, near train overpass, 19°7'N 99°12'W, reared ex. flowers *Senecio sanguisorbae* DC. (89M3) [Asteraceae], 8 Aug 1989, A. L. Norrbom, 1f (USNM USNMENT00120043). **Morelos:** Parque Iztaccíhuatl-Popocatépetl, (Amecameca - Cholula), Rt 451, 3900 m, reared ex. flowers of *Barkleyanthus mairetianus* DC (89M15) [Asteraceae], 13 Aug 1989, A. L. Norrbom, 1f (USNM USNMENT01232021).

***Campiglossa* n. sp. 18**

Figs. 49–50, 77, 100, 124, 149, 174, 202, 231

Diagnosis. This species differs from all of its neotropical congeners in having distiphallus with spines on both lateral sides of preglans, on one side 1 large conical spine, on other with 2 large conical spines. Glans with acrophallus small (length 0.30 mm) (Fig. 231). This species differs from all of its neotropical congeners except *C. luculenta* and *Campiglossa* n. sp. 19 in having subapical elongated hyaline spot on cell r_{4+5} than touchingvein R_{4+5} (Figs. 49–50). It differs from *C. luculenta* in having the distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It differs from *Campiglossa* n. sp. 19 in having the distiphallus with 4-5 large spines on both lateral sides of preglans (Fig. 232). This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 9, *Campiglossa* n. sp. 14, *Campiglossa*

n. sp. 15, *Campiglossa* n. sp. 16 and *Campiglossa* n. sp. 19 in having the crossvein r-m aligned with apex of vein R_1 (Figs. 49–50). It differs from *Campiglossa* n. sp. 9 in having abdomen black, bright; tergites 1+2 and lateral sides of tergites 3-6 with setulae lanceolate, white to yellow, centrally and sublaterally with setulae acuminate, black. It differs from *Campiglossa* n. sp. 14 in having aculeus tip bilobed (middle lobe with small notch) (Fig. 122); distiphallus with spines on both lateral sides of preglans, on one side 2 conical spines, on other with 3 conical spines (Fig. 227). It differs from *Campiglossa* n. sp. 15 in having the wing with faint hyaline marks (elongated weak) between pterostigma to crossvein r-m and apical cell r_{4+5} (Fig. 44); distiphallus with 6 large spines on both lateral sides of preglans (Fig. 228). It differs from *Campiglossa* n. sp. 16 in having distiphallus with 3 large conical spines on both lateral sides of preglans (Fig. 229); cell r_{4+5} of male with 12-13 small spots subbasally, aligned with R_{4+5} and M_1 (Fig. 16). This species differs from all of its neotropical congeners except *C. taenipennis*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 10, *Campiglossa* n. sp. 12, *Campiglossa* n. sp. 20 and *Campiglossa* n. sp. 21 in having cell r_{2+3} with 2 marginal rouded hyaline spots (Figs. 49–50). It differs from *C. taenipennis* in having distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212); aculeus all yellowish (Fig. 84). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 10 in having second anepisternal seta acuminate, black; proctiger with setae very dense and staut (Fig. 167). It differs from *Campiglossa* n. sp. 12 in having lateral surstylus with serrated dorsal lobe, distinct alongated (Fig. 197). It differs from *Campiglossa* n. sp. 20 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 233). It differs from *Campiglossa* n. sp. 21 in having distiphallus with strong and long spines on both lateral sides of preglans, a group of 5-8 spines each side (Fig. 234).

Description. Body length 2.60–3.06 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.79–0.92 mm) than long (0.52–0.68 mm), 0.65–0.73 times as high as long. Mostly yellow, ocellar tubercle brown, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.40–0.51 mm) less than width at vertex (0.47–0.56 mm), slightly narrowed to anterior margin (0.37–0.42 mm). 2 dark brown to black frontal setae, acuminate, equal in size.

Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.22–0.23. Eye ovoid, long diameter 0.62–0.71 mm, width 0.44–0.49 mm, ratio 0.69–0.70. Antenna yellow; first flagellomere longer than wide, long diameter 0.17–0.22 mm, width 0.13 mm, ratio 0.59–0.76.

Thorax: Length 1.39–1.58 mm. Ground color dark brown; scutum usually with 5 yellowish vittae weak; sublateral vitta extended to scutellum; scutellum all brown. Mesonotum entirely grayish microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.16–4.15 mm, width 1.25–1.61 mm. Pattern reticulate. Both sexes (Figs. 49–50) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot (sometimes weak), with broad brown area posterior to it in cell r_1, r_{2+3} reaching to cell br. Pterostigmal brown area not extending into cell r_1 along costa and spot near anterior end of crossvein r-m small. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with hyaline spot basally and 3 large marginal hyaline spots (the first, with inverted cone shape). Cell r_{2+3} medially usually with 2-3 large hyaline spots obliquely aligned with proximal 2 large spots in r_1, 3-5 small preapical hyaline spots, 1 submarginal hyaline spot, touching vein R_{4+5} and 2 marginal hyaline spots, 1 anterior closer to vein R_{2+3} and 1 posterior closer to vein R_{4+5}. Cell br with 2-3 hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} with 7-13 hyaline spots (usually smaller) in basal two-third, 1 anterior subapical hyaline spot elongated (2 times more longer than wide) closer to vein R_{4+5}, and usually 1 apical hyaline spot between vein R_{4+5} and M_1.. Cell dm hyaline basally and 3-4 apical spots. Cell m_1 with 3 large marginal hyaline spots and 1 large anterior spot. Cell m_4 hyaline basally with 3 marginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, length 1.05–1.36 mm, oviscape length to thorax length ratio 0.75–0.86; with evenly distributed acuminate yellowish to brown setulae. Eversible membrane length 1,34 mm (Fig. 77). Aculeus (Fig. 101) all pale brown to yellow, length 1.22 mm, in ventral view with tip rounded (Fig. 124). Spermathecae brown, elongate, length 0.18 mm, surface with papillae (Fig. 149).

Male terminalia: Epandrium in posterior view (Fig. 174) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically (Figs. 174), in lateral view with dorsal lobe serrated, usually broadest medially (Fig. 202). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 174). Medial prensiseta on dorsal lobe elongate, with microtrichia distributed evenly, and with setulae in laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, on one side 1 large spine, on other with 2 large spines (Fig. 231). Glans with acrophallus small, length 0.30 mm. (Fig. 231).

Distribution. Highland Costa Rica (Heredia, Puntarenas, San José), central Mexico (Mexico, Michoacán, Tlaxcala), and Peru (Cusco). Elevational records range from 2200-3518 m.

Biology. This species has been reared from flowerheads of *Noticastrum marginatum* (Kunth) Cuatrec.

Type data. The holotype male is labeled “PERU: Cusco: Carretera Manu, W of Acjanaco, side road, WP 544, 13.20097°S” / “71.63834°W, 3518 m, emerged 24-30 Dec 2011 reared ex flowerheads of Noticastrum” / “marginatum (11-PE-17) collected 10 Dec 2011, Norrbom, Steck, Sutton & Nolazco” / “USNMENT00744148” [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the MHNJP. Paratypes: **COSTA RICA: Heredia:** Estacion Barva, LN 233400 523200, 2600 m, 3 May 1997, F. Alvarado, 1m (INBio INBioCRI002551807); **Puntarenas:** Monteverde, 10°18'N 84°49'W, 20-24 Jun 1986, G. Bohart & W. Hanson, 1m (USU USNMENT01232032); **San José:** San Gerardo de Dota, along Río Savegre, 9°33'N 83°48'W, 2200 m, 8-10 Aug 1995, M. A. Condon & A. L. Norrbom, 1f (USNM USNMENT00048237). **MEXICO: México:** Teotihuacan, 1 Jul 1965, O. S. Flint, 1m (USNM USNMENT00120028); Atlacomulco, 2591 m, 18 Aug 1954, J. G. Chillcott, 1f (CNC USNMENT01355068); **Michoacán:** Cotija, 14 oct 1975, B. Villegas, 1m (USNMENT01232033); **Tlaxcala:** 3.2 km W Tlaxcala, sweeping Alfalfa, 26 Apr 1953, R. C. Bechtel, E. I. Schlinger, 1m (USNMENT01232034).

***Campiglossa* n. sp. 19**

Figs. 51–52, 79, 102, 126, 150, 176, 232

Diagnosis. This species differs from all of its neotropical congeners in having distiphallus with 4-5 large conical spines on both lateral sides of preglans (Fig. 232). This species differs from all of its neotropical congeners except *C. luculenta* and *Campiglossa* n. sp. 18 in having subapical elongated hyaline spot on cell r_{4+5} close vein R_{4+5} (Figs. 51–52). It differs from *C. luculenta* in having this elongated spot connected with apical hyaline spot on male; distiphallus with 2 large conical spines on both lateral sides of preglans (Fig. 210). It differs from *Campiglossa* n. sp. 18 in having the distiphallus with spines on both lateral sides of preglans, on one side 1 conical large spine, on other with 2 conical large spines (Fig. 231).

Description. Body length 3.06–4.29 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.85–0.96 mm) than long (0.59–0.62 mm), 0.64–69 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.47–0.49 mm) less than width at vertex (0.57–0.61 mm), slightly narrowed to anterior margin (0.44–0.45 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate. Gena with few small lanceolate, white to yellow setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.21–0.23. Eye ovoid, long diameter 0.64–0.78 mm, width 0.42–0.51 mm, ratio 0.65. Antenna testaceous yellow to brown, first flagellomere longer than wide, long diameter 0.18–0.20 mm, width 0.15–0.17 mm, ratio 0.83–0.85.

Thorax: Length 1.12–1.48 mm. Ground color dark brown; scutum usually with 4 brown vittae; scutellum brown. Mesonotum entirely gray microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 3.59–3.89 mm, width 1.45–1.58 mm. Pattern reticulate. Both sexes (Figs. 51–52) with basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1

with hyaline spots (without on female), in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m small. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m (Figs. 51–52). Cell r_1 with hyaline spot basally and 3 large marginal hyaline spots. Cell r_{2+3} medially usually with 2 large hyaline spots obliquely aligned with large spot in r_1, 2 small preapical hyaline spots, 1 submarginal hyaline spot, touching vein R_{4+5} and 1 marginal hyaline spot closer to vein R_{2+3}. Cell br with 2-3 diffuse hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} with hyaline spots distributed in 2 rows, one along vein R_{4+5} and other along vein M_1 (some spots connected), 2 preapical spots aligned with submarginal and marginal spots in cell r_{2+3}, anterior subapical hyaline spot elongated (2-3 times more longer than wide) closer to vein R_{4+5} (in females this elongated area extends until to apice of cell r_{4+5}). Cell dm hyaline basally and 1-3 apical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 3-4 large hyaline spots (sometimes diffuse or connected), and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 and female tergite 6 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Female terminalia: Oviscape dark brown, bright, length 0.90–1.24 mm, oviscape length to thorax length ratio 0.78–0.83; with evenly distributed brown setulae. Eversible membrane (Fig. 79) length 1.00 mm. Aculeus (Fig. 102) all pale brown, length 0.95 mm in ventral view with tip pointed (Fig. 126). Spermathecae brown, elongated, length 0.17 mm, surface with papillae (Fig. 150).

Male terminalia: Epandrium in posterior view (Fig. 176) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view strongly medially curved, setulose except apically (Fig. 176), in lateral view with dorsal lobe serrated, usually broadest medially (Fig. 204). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 176); medial prensiseta on dorsal lobe (Fig. 176) Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with 4-5 large conical spines on both lateral sides of preglans (Fig. 232). Glans with acrophallus medium, length 0.37 mm (Fig. 232).

Distribution. Highlands of Ecuador (Azuay, Carchi) and western Venezuela (Mérida). Elevational records from label data of the examined specimens range from 2200-2950 m.
Biology. This species has been reared from flowerheads of *Noticastrum marginatum* (Kunth) Cuatrec.
Type data. The holotype male is labeled "Troya, 2950m. Carchi, ECUADOR 11-13.VI.1965 L. E. Pena" / "USNMENT01232026" [plastic bar code label]. Glued on pin, is in fair condition, and is deposited in the CNC. Paratypes: **ECUADOR: Azuay:** Cuenca, 2200 m, 10-20 Mar 1965, L. E. Peña, 3m (CNC USNMENT01355062, USNMENT01232024, USNMENT01355069); Cuenca, 2200 m, 14 Mar 1965, L. E. Peña, 1f (CNC USNMENT01232025). **VENEZUELA: Mérida:** Páramo La Culata low Paramo, reared ex. flowers head *Noticastrum marginatum* (H. B. K.) Cuatr. (V-6) 2900 m, 3 Jun 1988, A. L. Norrbom & G. J. Steck, 1m (USNM USNMENT00119093).

***Campiglossa* n. sp. 20**
Figs. 53, 177, 205, 233

Diagnosis.
This species differs from all of its neotropical congeners except *Campiglossa* n. sp. 8 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 233). The spines in *C. despecta* is in 2 rows with long, strong and same size, in both sides of preglans (Fig. 208). It differs from *Campiglossa* n. sp. 8 in having the wing with only 1 marginal hyaline spot in cell r_{2+3} (Figs. 32–33). This species differs from all of its neotropical congeners except *C. taenipennis*, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 10, *Campiglossa* n. sp. 12, *Campiglossa* n. sp. 18, and *Campiglossa* n. sp. 21 in having cell r_{2+3} with 2 marginal rouded hyaline spots (Fig. 53). It differs from *C. taenipennis* in having distiphallus with spines on both lateral sides of preglans, on one side a group of 5-6 large spines, on other with 2 large spines (Fig. 212); aculeus all yellowish (Fig. 84). It differs from *Campiglossa* n. sp. 5 in having distiphallus with strong spines in both lateral sides of preglans, on one side a group of 5-6 spines, on other with 1 spine (Fig. 218). It differs from *Campiglossa* n. sp. 10 in having second anepisternal seta acuminate, black; proctiger with setae very dense and staut (Fig. 167). It differs from *Campiglossa* n. sp. 12 in having lateral surstylus with serrated dorsal lobe, distinct alongated (Fig. 197). It differs from *Campiglossa* n. sp. 18 in having distiphallus with spines on both lateral sides of preglans, on one side 1 conical large spine, on other with 2

conical large spines (Fig. 231). It differs from *Campiglossa* n. sp. 21 in having distiphallus with strong and long spines on both lateral sides of preglans, a group of 5-8 spines each side (Fig. 234).

Description. Body length 2.90–3.03 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.78–0.81 mm) than long (0.52–0.54 mm), 0.66 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, face and parafacial whitish. Frons length (0.42–0.44 mm) less than width at vertex (0.51–0.52 mm), slightly narrowed to anterior margin (0.39–0.40 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white and brown setulae on dorsally, and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.20. Eye ovoid, long diameter 0.62–0.68 mm, width 0.46–0.49 mm, ratio 0.68–0.79. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.20–0.22 mm, width 0.13–0.15 mm, ratio 0.65–0.68.

Thorax: Length 1.07–1.27 mm. Ground color dark brown; scutellum brown at base, yellowish apically. Mesonotum entirely gray microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), second notopleural seta acuminate, light brown, other thoracic setae acuminate, dark brown to black.

Wing: Length 3.23–3.33 mm, width 1.18–1.28 mm. Pattern reticulate (Fig. 53). Basal third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large, crossing cell. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m (Fig. 53). Cell r_1 with hyaline spot basally and 3 large marginal hyaline spots. Cell r_{2+3} with 3 small basal hyaline spots, medially usually with 2 large hyaline spots obliquely aligned with large spot in cell r_1, 2 small preapical hyaline spots, 1 submarginal hyaline spot, touching vein R_{4+5} and 2 marginal hyaline spots, 1 anterior closer to vein R_{2+3} and 1 posterior closer to vein R_{4+5}. Cell br with 2 large hyaline spots distal to crossvein bm-m. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than ⅔ width of

cell r_{4+5}, with 3-4 hyaline spots subbasally, 2 preapical spots aligned with anterior marginal and submarginal spots in cell r_{2+3} and 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 3-5 apical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 1 large anterior spot. Cell m_4 with 5-6 anterior spots (sometimes diffuse or connected), and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with microtrichia. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 with row of large acuminate, pale brown setae. Sternite 5 with posterior margin concave (inverted U-shape).

Male terminalia: Epandrium in posterior view (Fig. 177) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically (Figs. 177), in lateral view with dorsal lobe serrated (Fig. 205). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta half size of medial (Fig. 177); medial prensiseta on dorsal lobe (Fig. 177). Proctiger elongate, with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, 2 clusters with 15-20 spines, distributed longitudinally, gradually decreasing in size (Fig. 233). Glans with acrophallus elongate, length 0.42 mm (Fig. 233), apically with sclerotized tube.

Distribution. Northern Argentina (Catamarca, Tucumán).

Biology. No host plant information is known for this species.

Type data. The holotype male is labeled "ARG Catamarca Alamitos XI-5-72 G. E. Bohart" / "USNMENT01232023" / [plastic bar code label]. Glued on pin, is in fair condition, and is deposited in the USNM. Paratypes: **ARGENTINA: Catamarca:** Alamitos, XI-5-1972, G. E. Bohart (USNMENT01355064). **Tucumán**: Cochuna, 20 oct 1972, G. E. Bohart (USNMENT01232022).

***Campiglossa* n. sp. 21**

Figs. 54, 178, 206, 234

Diagnosis. This species differs from all of its neotropical congeners in having the distiphallus with a group of 5-8 strong and long spines on both lateral sides of the preglans (Fig. 234); the medial surstylus with the prensisetae both conical, the lateral prensiseta one-third of the size of the medial (Fig. 178). This species also differs from all of its neotropical congeners except

C. taenipennis, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 10, *Campiglossa* n. sp. 12, *Campiglossa* n. sp. 18 and *Campiglossa* n. sp. 20 in having cell r_{2+3} with 2 marginal rounded hyaline spots (Fig. 54). It differs from *C. taenipennis* in the spination of the preglans (in *C. taenipennis* with 5-6 spines on one side, but only 2 large spines on the other; Fig. 212). It differs from *Campiglossa* n. sp. 5 in the spination of the preglans (in *Campiglossa* n. sp. 5 with 5-6 spines on one side, but only 1 spine on the other; Fig. 218). It differs from *Campiglossa* n. sp. 10 in having the second anepisternal setalanceolate, white; the proctiger with setae xx, not very dense and stout as in *Campiglossa* n. sp. 10 (Fig. 167). It differs from *Campiglossa* n. sp. 12 in having lateral surstylus with serrated dorsal lobe, distinct alongated (Fig. 197). It differs from *Campiglossa* n. sp. 18 in having distiphallus with spines on both lateral sides of preglans, on one side 1 conical large spine, on other with 2 conical large spines (Fig. 231). It differs from *Campiglossa* n. sp. 20 in having distiphallus with spines on both lateral sides of preglans, 15-20 spines, distributed longitudinally, gradually decreasing in size (long spines apically and small distally) (Fig. 233).

Description. Body length 2.62–2.73 mm, dark brown in ground color, mostly gray microtrichose. Setae dark brown to black.

Head: Slightly higher (0.64–0.79 mm) than long (0.45–0.47 mm), 0.59–0.70 times as high as long. Mostly yellow, ocellar tubercle brown to black, occiput mostly black except dorsally, sometimes with medial extension reaching ocellar tubercle, face and parafacial whitish. Frons length (0.35–0.41 mm) less than width at vertex (0.40–0.47 mm), slightly narrowed to anterior margin (0.28–0.32 mm). 2 dark brown to black frontal setae, acuminate, equal in size. Anterior orbital seta acuminate, posterior seta smaller, white and lanceolate, reclinate. Gena with few small lanceolate, white to yellow setulae on dorsally (sometimes brown), and row of lanceolate, white setae on ventral margin; gena height to eye long diameter ratio 0.19–0.22. Eye ovoid, long diameter 0.51–0.62 mm, width 0.39–0.46 mm, ratio 0.74–0.76. Antenna yellow to brown, first flagellomere longer than wide, long diameter 0.15–0.17 mm, width 0.11–0.13 mm, ratio 0.73–0.76.

Thorax: Length 0.93–1.17 mm. Ground color dark brown; scutellum entirely dark brown; mesonotum gray microtrichose. Scutal setulae lanceolate, white to yellow, slightly increasing in size posteriorly. Scutellum with 2 pairs of acuminate setae, apical seta less than half as long as basal seta. Second anepisternal seta and anepimeral seta lanceolate, white to yellow (concolorous with setulae), other thoracic setae acuminate, dark brown to black.

Wing: Length 2.80–3.13 mm, width 1.03–1.18 mm. Pattern reticulate (Fig. 54). Basal

third hyaline reticulate from cells bc and c to anal lobe and cell m_4. Pterostigma brown with subapical marginal orange spot, brown area posterior to it in cell r_1 without hyaline spots, in cell r_{2+3} with hyaline spots, spot near anterior end of crossvein r-m large. Pterostigmal brown area not extending into cell r_1 along costa. Brown area bordering crossvein r-m broader than length of r-m; brown area bordering crossvein dm-m broader than length of dm-m. Cell r_1 with hyaline spot basally and 3 large marginal hyaline spots. Cell r_{2+3} medially usually with 3 large hyaline spots obliquely aligned with large spot in r_1, 1-2 minute preapical hyaline spots, 1 small submarginal hyaline spot, touching vein R_{4+5} and 2 marginal hyaline spots, 1 anterior closer to vein R_{2+3} and 1 posterior closer to vein R_{4+5}. Cell br with 3 hyaline spots distal to crossvein bm-m, the least, not reaching vein R_{4+5}. Cell r_{4+5} with 1 large hyaline spot near anterior end of crossvein dm-m more than ⅔ width of cell r_{4+5}, with 3 hyaline spots subbasally, 2 small preapical spots, and 1 marginal apical hyaline spot between vein R_{4+5} and M_1. Cell dm hyaline basally and 3-5 apical spots. Cell m_1 with 3 marginal or submarginal hyaline spots and 2-3 anterior spot (sometimes connected). Cell m_4 with 5-6 anterior spots and 3 marginal or submarginal hyaline spots.

Legs: Mostly yellow. Femur brown to black except extreme apex area.

Abdomen: Ground color dark brown, with gray microtrichia. Each tergite with pair of submedial and lateral dark spots halfway between anterior and posterior margins. Tergites uniformly setulose, setulae acuminate except row of white to yellow lanceolate setulae on posterior margin of all but last tergite, male tergite 5 with row of large acuminate, pale brown setae. Male sternite 5 with posterior margin concave (inverted U-shape).

Male terminalia: Epandrium in posterior view (Fig. 178) inverted U-shaped, with setulae and microtrichia distributed evenly. Lateral surstylus in posterior view medially curved, setulose except apically (Fig. 178), in lateral view dorsal lobe with serrated, margin usually with teeth broadest (Fig. 206). Medial surstylus with pair of apical prensisetae; both conical, lateral prensiseta one-third of size of medial (Fig. 178); Proctiger with microtrichia distributed evenly, and with setulae laterally and ventrally. Distiphallus with spines on both lateral sides of preglans, group 5-6 spines each side (Fig. 234). Glans with acrophallus elongate, length 0.35–0.40 mm. (Fig. 234), apically with sclerotized tube.

Distribution. Highland Guatemala (Huehuetenango, Sacatepéquez). Elevational records from label data of the examined specimens range from 2115-3183 m.

Biology. This species has been reared ex flowers *Ageratina pringlei* (B.L.Rob. & Greenm.) R.M.King & H.Rob. and swept from flowering *Sigesbeckia jorullensis* Kunth.

Type data. The holotype male is labeled "GUATEMALA: Sacatepéquez: forest above La Cumbre de Calderas, radio tower site W of San Juan Calderas, 23.X.1990, A. L. Norrbom" / "swept from flowering *Sigesbeckia joruliensis* HBK (90G24)" / "USNMENT00118473" [plastic bar code label]. It is double mounted (minuten), is in fair condition, and is deposited in the USNM. Paratypes: **GUATEMALA: Huehuetenango:** Sierra de los Cuchumatanes, Paquix, rocky outcrop, 15.4409°N 91.46945°W, 3183 m, emerged 29 Nov - 9 Dec 2007 reared ex flowerheads of *Ageratina pringlei* (07G67) [Asteraceae] collected 25 Nov 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, F. Camposeco, 1f (USNM USNMENT00671477). **Sacatepéquez:** Volcan de Agua, trail from Santa Maria de Jesus, cultivated zone, 14.49255°N 90.71864°W, 2115 m, 13 Nov 2007, B.D. Sutton, A.L. Norrbom, J. Monzón, 1m (USNM USNMENT00104355).

Other taxonomic changes

***Dioxyna enigma* (Hering), new combination**

Figs. 265–266

Paroxyna enigma Hering 1941: 161 [description; Uruguay]; Aczél 1950: 287 [catalog, as synonym of *P. chilensis* (Macquart)]; Foote 1967: 34 [catalog].
Campiglossa enigma: Norrbom *et al*. 1999: 110 [new combination; catalog].

Distribution. Uruguay (Buschental).
Biology. No host plant information is known for this species.
Type data. This species was described from "1♂ Type", collected from "Buschental (Uruguay)" in 1935. We examined the holotype (Fig. 265) in the The Natural History Museum (BMNH). It has labels with "Type" / "Type" / "Buschental Uruguay 10 X 1935 leg. H. Schneider" / "Paroxyna enigma ♂ Type det. M. Hering 1940" / "Purch. from E. M. Hering B. M. 1965-270" / "Dioxyna enigma (Hering) S. Lampert & A. L. Norrbom viii.2017" / "NHMUK 010862981".

***Dioxyna fibulata* (Wulp), new combination**

Figs. 267–268

Tephritis fibulata Wulp 1900: 421 [description; Mexico].

Euribia fibulata: Hendel 1914: 66, 67 [new combination; catalog, in key]; Aczél 1950: 183 [catalog].

Paroxyna fibulata: Foote 1965: 245 [new combination; lectotype designation]; Foote 1967: 34 [catalog].

Campiglossa fibulata: Norrbom *et al*. 1999: 110 [new combination].

Distribution. Mexico (Orizaba).

Biology. No host plant information is known for this species.

Type data. This species was described from "Four specimens" of both sexes (as indicated by the male and female symbols following the name of the species), collected from "Mexico, Orizaba (H. H. Smith and F. D. Godman)". Foote (1965) designated a male as lectotype. We examined 1 male paralectotype (Figs. 267) in BMNH. It bears the following labels: "Co-type" / " B. C. A. Dipt.II. Tephritis fibulata, v.d.W." / "Cent. America Pres. By & O. Salvin. B.M. 1903-172." / "Orizaba H. H. S & F. D G. Dec. 1887." / "Dioxyna fibulata (Wulp) S. Lampert & A. L. Norrbom VIII.2017" / "NHMUK 01086282".

***Dioxyna obsoleta* (Wulp), new combination**

Figs. 269–270

Tephritis obsoleta Wulp 1900: 421. [description; Veracruz, Mexico].

Euribia obsoleta: Hendel 1914: 66, 67 [new combination; catalog, in key]; Aczél 1950: 185 [catalog].

Paroxyna obsoleta: Foote 1965: 245 [new combination; type data]; Foote 1967: 35 [catalog].

Campiglossa obsoleta: Norrbom *et al.* 1999: 112 [new combination; catalog].

Distribution. Mexico (Orizaba).

Biology. No host plant information is known for this species.

Type data. This species was described from "A single female specimen", collected from "Mexico, Orizaba (H. H. Smith and F. D. Godman)". The holotype (Fig. 269) in the BMNH is labeled with "Type" / "B. C. A. Dipt.II. Tephritis obsoleta, v.d.W." / "Cent. America Pres. By F.D. Godman & O. Salvin. B.M. 1903-172." / "Orizaba H. H. S & F. D G. Dec. 1887." / "Dioxyna obsoleta (Wulp) S. Lampert & A. L. Norrbom VIII.2017" / "NHMUK 010862985".

***Dyseuaresta cassara* (Walker), new combination**

Figs. 261–262

Trypeta cassara Walker 1849: 1026 [description; Peru].
Euribia cassara: Hendel 1914: 66, 67 [new combination; catalog, in key].
Paroxyna cassara: Hering 1941: 159, 161 [new combination; in key]; Aczél 1950: 286 [catalog]; Foote 1967: 34 [catalog].
Campiglossa cassara: Norrbom *et al.* 1999: 109 [new combination; catalog].

Distribution. Peru.
Biology. No host plant information is known for this species.
Type data. This species was described from "1♀ Type" (therefore holotype), collected in "Peru" in 1840. We examined the holotype (Fig. 261) via loan from the BMNH. It bears labels (Fig. 262) with "Type" / "Trypeta cassara Walk" / "Peru Bt at Mr. Children's Sale. B. M. 1840-30" / "40 3 30 H" / "*Euaresta cassara* (Walker) det. Hardy 1961" / "Dyseuaresta cassara (Walker) ♀ Det. A. L. Norrbom viii. 2017" / "NHMUK010862977".

***Trupanea freyae* Lindner, revised combination**

Figs. 259–260

Trypanea freyae Lindner 1928: 32 [description; Argentina]; Aczél 1950: 304 [catalog].
Paroxyna freyae: Foote 1967: 35 [new combination; catalog].
Campiglossa freyae: Norrbom *et al.* 1999: 110 [new combination; catalog].

Distribution. Argentina (Córdoba).
Biology. No host plant information is known for this species.
Type data. This species was described from "3♂, 2♀ aus der Sierra von Cordoba (Argent.) (und zwar aus dem Gebirge bei La Falda [and indeed from the mountains at La Falda]) VII. 25 [Jul 1925]" collected on the "deutschen [German] Gran Chaco-Expedition (Leiter Professor Dr. Hans Krieg)". Through the kindness of Dr. Frauk Stebner and Dr. Hans-Peter Tschorsnig we examined 2 male and 1 female syntypes in the Staatliches Museum für Naturkunde (SMN). They each bear a label with "Sierra Cordoba Arg.VII 25. Lind. D. Chaco - Exped". One male and one female have another label with "Type 1927 Lindner [red lettering] *Trypanea freyae* Lind"; the second male (without wings) has labels with "Cotype

1927 Lindner [red lettering]" and "*Trypanea freyae* Lind" (Figs. 259–260). We here designate the first male with the "type" label as lectotype to stabilize nomenclature and fix the status of this name. We added lectotype or paralectotype labels to all three specimens.

Remarks. Foote (1967) placed this species in *Paroxyna* without explanation (presumably based on its somewhat reticulate wing pattern), and Norrbom *et al*. (1999) transferred it to *Campiglossa*, but it is here transferred back to *Trupanea*, based on the number of scutellar setae (one pair), number of frontal setae (3 pairs), postocular setulae white and lanceolate, proboscis not geniculate, abdomen entirely gray, and oviscape with setulae white lanceolate.

Phylogeny of the species of *Campiglossa* Rondani (Diptera: Tephritidae) based on morphological characters

A cladistic analysis of a matrix (Table 1) comprising 39 characters and 78 terminal taxa, with seven outgroup species and 71 species of *Campiglossa*, was performed. The characters, including the external morphology and male and female terminalia, and their respective states are listed at the end of this section.

Mastigolina rufocomata (Munro, 1947) was used to root the tree. This species is also a Tephritinae and belongs to the *Sphenella* genus group.

Species of the genera *Mesoclanis*, *Scedella* and *Dioxyna* were used as outgroups. They were selected based on the classification of Norrbom *et al.* (1999) where these genera were classified as belonging to the *Campiglossa* genus group. This group of genera was preliminarily revised by Munro (1957) (as the *Paroxyna*-series) for the Afrotropical fauna, then by Korneyev (1990) and Merz (1992) for the Palearctic fauna. Norrbom *et al.* (1999) included 11 genera in this group: *Antoxya* Munro, *Campiglossa* Rondani, *Desmella* Munro, *Dioxyna* Frey, *Homoeotricha* Hering, *Lethyna* Munro, *Mesoclanis* Munro, *Oxyna* Robineau-Desvoidy, *Oxyparna* Korneyev, *Scedella* Munro and *Tanaica* Munro. The monophyly of this group is supported mostly by having a geniculate proboscis and distinctly spinose phallic preglans area (Korneyev 1999).

The analysis with implicit weighing of characters resulted in 10 trees with a length of 255 steps, 9.50127 adjusted fit, CI=22 and RI=59. The strict consensus cladogram has a length of 265 steps, with CI=21 and RI=57. Herein we present and discuss the topology of this tree (Fig. 286).

In the current analysis the species *C. freyae* Lindner is at the base of the cladogram and is supported by three homoplasies: crossvein r-m without dark brown border (11:2) (Fig. 259); female with one subapical orange spot in pterostigma (12:0) (Fig. 259); and cell r_{4+5} with apical hyaline rounded spot (20:1) (Fig. 259). This species also presents the following characters: one pair of scutellar setae; 3 pairs of frontal setae; postocular setulae white and lanceolate; proboscis not geniculate; and oviscape with setulae white lanceolate. Originally described by Lindner (1928) in the genus *Trypanea* (= *Trupanea*), *C. freyae* was placed by Foote (1967) in *Paroxyna* (currently considered a synonym of *Campiglossa*) without explanation, but presumably based on its somewhat reticulate wing pattern. Norrbom *et al*. (1999) transferred it to *Campiglossa*, but, herein we propose the transfer of this species back to the genus *Trupanea.* This species also presents the following characters consistent with

Trupanea and not *Campiglossa*: one pair of scutellar setae; 3 pairs of frontal setae; postocular setulae white and lanceolate; proboscis not geniculate; and oviscape with setulae white lanceolate.

The species *Dyseuaresta adelphica* (Hendel) was used as an outgroup and along with *C. cassara* (Walker) is placed in the second most basal clade of the tree (Fig. 287). The synapomorphy that supports the monophyly of this clade is the presence of a bulla in cell r_{4+5} (23:1) (Fig. 261). In this analysis this character appears as a synapomorphy for *Dyseuaresta*, however, it is known that this structure occurs in other genera of Tephritinae not included in this analysis, such as *Paracanta* and some species of Tephritini, such as *Euaresta*. The species *D. adelphica* and *C. cassara* also have one pair of setae on the scutellum and oviscape with white lanceolate setulae (Fig. 273). Based on these characters and this topology, we propose the transfer of *C. cassara* to the genus *Dyseuaresta.*

In the rest of the tree two monophyletic groups are formed: one group with *Mesoclanis polana* (Munro), *Scedella caffra* (Loew) and *S. praetexta* (Loew) and the other group containing all the other species. These three species were included as outgroup taxa and formed a monophyletic clade, supported by one synapomorphy and two homoplasies: distiphallus with preglans spinulose on protuberance (35:2); brown area in cell r_1 posterior to pterostigma with hyaline spots in male (14:0); and cell r_1 with more than 3 marginal hyaline spots in male (18:2). The spinulose preglans area occurs in other genera of the *Campiglossa* genera group not included in this analysis. In *Mesoclanis*, *Scedella* and *Lethyna* these spines are inserted on a swelling or protuberance and usually with a cluster of spines.

The next clade comprises *Dioxyna chilensis* (Macquart) and *D. crockeri* (Curran), as well as *C. obsoleta* and *C. fibulata*. The clade is supported by one synapomorphy and one homoplasy: female with large acuminate setae on 4th tergite (29:1) (Fig. 271); head length greater than height (1:1) (Fig. 272). Although *Campiglossa* and *Dioxyna* are morphologically similar in having geniculate mouthparts (Headrick & Goeden 1999), *Dioxyna* differs by having the labella longer than the length of the head (3:2), the ventral portion of the face projected forward, and the distiphallus without spines on the preglans area. These character states are present in *C. obsoleta* and *C. fibulata* so they are here transferred to *Dioxyna*.

Campiglossa does not constitute a monophyletic clade given the position of *C. freyae*, *C. cassara*, *C. obsoleta* and *C. fibulata* (Fig. 287). Thus, we propose the following new combinations for these four species: *C. freyae* is returned to the genus *Trupanea*, *C. cassara* is transferred to the genus *Dyseuaresta*, and the species *C. fibulata* and *C. obsoleta* are transferred to the genus *Dioxyna*. This restricted concept of *Campiglossa* is monophyletic in

the analysis. It is supported by one synapomorphy and two homoplasies: preglans with spines, not on protuberance (35:1) (Figs. 207–234); face without projection (2:0) (Fig. 283); and basal half of wing from cells bc and c to preapical part of cell br and preapical part of cell dm predominantly hyaline reticulate (21:0) (Figs. 3–54). Also, all *Campiglossa* (except *C. media*) have the proboscis capitate with labella short and dilated (3:1) and female with one subapical orange spot on pterostigma (12:0) (Figs. 3–54).

Dioxyna and *Campiglossa* are sister groups in the analysis based on one synapomorphy and two homoplasies: lateral prensiseta no more than half size of medial prensiseta (33:0) (Figs. 151–178), fore femur without lanceolate setulae (26:1) and, aculeus tip trilobate with middle lobe rounded (39:1) (Figs. 81, 84, 123, 125). Previously, Novak (1974), White (1988) and Headrick & Goeden (1999) reported the close relationship between *Campiglossa* and *Dioxyna.*

The interspecific relationships within *Campiglossa* (among the 67 terminals included in the analysis) are not well resolved (Fig. 286).

The first lineage at the base of *Campiglossa* is *C. media*, which is placed as sister group of all the other *Campiglossa* species included in the analysis. This position was constant in all analyses and resultant trees until reaching this topology. This species has proboscis long geniculate, labella as long or longer than head (3:2), a character state that is also present in species of *Mesoclanis* and *Dioxyna*; female without spots on pterostigma, character also present in all species of the outgroups (except *Mesoclanis*), and three species of *Campiglossa* (*C. frolica*, *C. anomalina* and *C. jugosa*).

The clade formed by *C. trinotata*, *C. pallidipennis*, and *Campiglossa* n. sp. 15 is supported by one homoplasy: posterior orbital seta inclinate (4:1), a character state also present in *Campiglossa* n. sp. 1 and *C. irrorata*. The subclade with *C. pallidipennis* and *Campiglossa* n. sp. 15 is also supported by one synapomorphy and one homoplasy of the wing: cell r_1 of male without marginal hyaline spots in area posterior to pterostigma (18:3); and cell r_{4+5} without apical hyaline spot (20:1) (Figs. 11–12, 44).

The large clade composed of 54 species of *Campiglossa* is supported by one synapomorphy and two homoplasies: spines of preglans with base narrow (36:1) (Figs. 215–216, 221–222); female with a large hyaline spot near anterior end of r-m in cell r_{2+3}: (17:0) (Figs. 28–29); and basal half of wing predominantly hyaline reticulate with spots relatively large and connected (22:1) (Figs 19–20, 32–33). Relationships among the species within this clade are poorly resolved; the nine subclades forming a polytomy within this lineage are weakly supported.

The first clade (Fig. 288) is composed of *C. granulata* and *C. peringueyi* and is supported by one homoplasy: crossvein r-m, dark brown area with narrow width less than length of r-m: (11:1) (Figs. 21–22, 40). The second clade is composed by *Campiglossa* n. sp. 8, *C. doronici*, *C. genalis*, *C. messalina*, *C. guttularis* and *C. intermedia* and is supported by one homoplasy: spines of preglans with base wide (large) (Figs. 208, 221). The third clade is composed of *Campiglossa* n. sp. 13, *Campiglossa* n. sp. 6, *C. duplex*, *C. umbritica*, *C. ignobilis*, *C. spinate*, *C. hirayamae*, *C. fuscata*, and *C. irrorate* and is supported, by one homoplasy: scutellum entirely dark brown: (8:0). The fourth clade is composed of *C. cain*, *C. deserta*, *C. clathrate*, *C. farinata*, *C. defasciata*, *C. misella*, *C. punctella*, *C. jamesi*, *C. plantaginis*, *C. albiceps*, *C. contingens*, and *C. frolica* and is supported by two homoplasies: male, brown area in cell r_1 posterior to pterostigma with hyaline spots (14:0) (Figs. 45, 51) and middle lobe of aculeus tip with small notch (39:2) (Fig. 122). This species also has posterior notopleural setae white (except *C. cain* e *C. deserta*) (7:1). Korneyev (1999) cited that the species from the *Campiglossa* genus group have posterior notopleural seta black. However, ten species of *Campiglossa* examined in this study have this seta white lanceolate. The clade *C. farinata*, *C.* defasciata, *C. misella*, *C. punctella*, *C. jamesi*, *C. plantaginis*, *C. albiceps*, *C. contingens*, and *C. frolica* is supported by one homoplasy: postocular setae lanceolate (5:1). Although this character state occurs only in this clade of *Campiglossa*, it is also present in *Mastigolina rufocomata* and *Trupanea freyae*.

The last clade composed by *C. taenipennis*, *C. venezolensis*, *Campiglossa* n. sp. 3, *Campiglossa* n. sp. 21, *C. guttella*, *C. luxorientis*, *Campiglossa* n. sp. 9, *C. achyrophori*, *Campiglossa* n. sp. 7, *Campiglossa* n. sp. 17, *Campiglossa* n. sp. 5, *Campiglossa* n. sp. 10, *Campiglossa* n. sp. 11, *C. anomalina*, *C. jugosa*, *C. loewiana*, *C. difficilis*, *C. anchorata,* and *C. argyrocephala* is supported by two homoplasies: scutellum entirely dark brown (8:0); and basal half of the wing predominantly hyaline reticulate with hyaline spots relatively small and isolated (22:0) (Figs. 1, 26–27). In Tephritidae, wing spots form distinct patterns that are generally used for recognition of genera. The spots in *Campiglossa* species have common behavioral elements of which some occur in other genera, for example, some wing displays; however, each species also displays unique behaviors (Goeden *et al*. 1994b). Wing lofting is the most common behavior, it is displayed by both sexes spontaneously and occurs with minor variations in each species.

List of characters used in phylogenetic analysis of relationships among the species of *Campiglossa* Rondani

The matrix is composed of 78 terminals of which seven are outgroup species. The matrix of 39 characters is based on morphology of males and females, wherein six are of the head, four of the thorax, 13 of the wing, three of the legs, 13 of the abdomen, including male and female terminalia.

The characters that refer to the male or female have the word male/female at the beginning of the character and the character that refers to both (male and female) will not.

Subsequent to each character, the number of steps (L), the consistency (IC) and retention (IR) indexes were included.

Head

1. Head, size (L = 2; IC = 50; IR = 75):
(0) height greater than length;
(1) length greater than height.

2. Face, projection (L = 4; IC = 25; IR = 80):
(0) absent;
(1) present.

3. Proboscis, shape (L = 4; IC = 50; IR = 71):
(0) very short, labella capitate;
(1) short geniculate, labella shorter than head;
(2) long geniculate, labella as long or longer than head.

4. Posterior orbital seta, orientation (L = 3; IC = 33; IR = 50):
(0) reclinate;
(1) inclinate.

5. Postocular setae, shape (L = 4; IC = 50; IR = 77):
(0) mixed lanceolate and acuminate;
(1) all lanceolate;
(2) all acuminate.

6. Antenna, first flagellomere, length (L = 17; IC = 5; IR = 56):
(0) as long as wide;
(1) longer than wide.

Thorax

7. Posterior notopleural seta, color (L = 4; IC = 25 IR = 76):
(0) brown to black;
(1) white.

8. Scutellum, color (L = 21; IC = 9; IR = 38):
(0) entirely dark brown;
(1) yellowish apically;
(2) entirely yellow.

9. Scutellum, apical seta (L = 2; IC = 50; IR = 50):
(0) present;
(1) absent.

10. Scutellum, apical seta, length (L = 2; IC =100; IR = 100):
(0) shorter than basal seta (half as long as basal seta);
(1) same size as basal seta;
(2) minute (< 2x length of setulae).

Wing
11. Crossvein r-m, dark brown area bordering both sides (L = 10; IC = 20; IR = 63):
(0) broad, width equal to or greater than length of r-m;
(1) narrow, width less than length of r-m;
(2) absent.

12. Female, pterostigma, subapical orange spots, number (L = 7; IC = 28; IR = 58):
(0) 1;
(1) 2;
(2) 0.

13. Male, broad dark band on pterostigma (L = 2; IC = 50; IR = 0):
(0) extended apically (solid, without hyaline spots);
(1) not extended apically (if dark markings extended, including hyaline spots).

14. Male, area in cell r_1 posterior to pterostigma (L = 13; IC = 7; IR = 47):
(0) brown, with hyaline spots;
(1) brown, without hyaline spots;
(2) hyaline.

15. Male, area in base of cell r_{2+3} posterior to pterostigma (L = 9; IC = 22; IR = 30):
(0) brown, with hyaline spots;
(1) brown, without hyaline spots.
(2) hyaline.

16. Female, cell r_{2+3}, hyaline spot near anterior end of r-m (L = 4; IC = 25; IR = 50):
(0) present;
(1) absent.

17. Female, cell r_{2+3}, hyaline spot near anterior end of r-m, size (L = 12; IC = 16; IR = 50):
(0) large;
(1) small;
(2) area covered by larger hyaline area.

18. Male, cell r_1, hyaline spots posterior to pterostigma, number (L = 8; IC = 37; IR = 44):
(0) 3;
(1) 1-2;
(2) more than 3;
(3) 0.

19. Wing, cell r_{2+3}, marginal hyaline spots, number (L = 19; IC = 15; IR = 30):
(0) 1;
(1) 2;
(2) more than 2;
(3) 0.

20. Wing, cell r_{4+5}, apical hyaline rounded spot (L = 10; IC = 10; IR = 10):
(0) present;
(1) absent.

21. Wing, basal half of wing from cells bc and c to preapical part of cell br and preapical part of cell dm (L = 5; IC = 20; IR = 76):
(0) predominantly hyaline reticulate;
(1) not predominantly hyaline reticulate.

22. Wing, basal half predominantly hyaline reticulate (L = 4; IC = 25; IR = 84):
(0) with hyaline spots relatively small and isolated;
(1) with hyaline spots relatively large and connected.

23. Wing, cell r_{4+5}, bulla (L = 1; IC = 100; IR = 100):
(0) absent;
(1) present.

Legs
24. Hind femur, color (L = 7; IC = 28; IR = 58):
(0) black only basally;
(1) entirely brown to black;
(2) entirely yellow.

25. Fore femur, color (L = 10; IC = 20; IR = 50):
(0) black only basally;
(1) entirely brown to black;
(2) entirely yellow.

26. Fore femur, lanceolate setulae (L = 6; IC = 16; IR = 44):
(0) present;
(1) absent.

Abdomen
27. Tergites, color (L = 10; IC = 20; IR = 42):
(0) each tergite with pair of submedial dark spots halfway between anterior and posterior margins;
(1) with uniform coloration (without spots);
(2) each tergite with yellow vitta in posterior margin.

28. Tergite, setae, color (L = 4; IC = 50; IR = 60):
(0) black and white;
(1) only white;
(2) only black.

29. Female, large acuminate setae in 4th tergite (L = 1; IC = 100; IR = 100):
(0) without large setae;
(1) with large setae.

30. Male sternite 5, posterior margin, setation (L = 11; IC = 9; IR = 44):
(0) with large setae;
(1) with small setae.

31. Lateral surstylus, setae, density (L = 2; IC = 50; IR = 0):
(0) sparse;
(1) with dense posterodorsal cluster.

32. Surstyli, length
(0) short;
(1) long.

33. Medial surstylus, prensisetae, size (L = 1; IC = 100; IR = 100):
(0) lateral prensiseta no more than half size of medial prensiseta;
(1) subequal.

34. Proctiger, setae, density (L = 2; IC = 50; IR = 50):
(0) not dense, slender;
(1) very dense and stout.

35. Distiphallus, preglans spines (L = 2; IC = 100; IR = 100):
(0) absent;
(1) present, not on protuberance (sparsely spinulose);
(2) present, on protuberance (spinulose on protuberance).

36. Distiphallus, spines of preglans, shape (L = 4; IC = 25; IR = 86):
(0) base wide (large);
(1) base narrow (smaller).

37. Glans, apical tube (L = 10; IC = 10; IR = 65):
(0) absent;
(1) present.

38. Glans, apical tube, shape (L = 10; IC = 10; IR = 40):
(0) cylindrical, curved;
(1) tapered (similar to cone).

39. Aculeus tip, shape (L = 17; IC = 17; IR = 51):
(0) trilobate, middle lobe rounded;
(1) trilobate, middle lobe pointed;
(2) trilobate, middle lobe with small notch;
(3) not lobed.

Table 1. **Matrix of characters and taxa used in phylogenetic analysis of relationships among the species of *Campiglossa* Rondani (character numbers 1-20)**

Taxa \ Characters	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Mastigolina rufocomata (Munro)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dioxyna chilensis (Macquart)	1	1	2	0	0	1	0	1	1	-	1	2	1	1	2	1	2	0	0	0
Dioxyna crockeri (Curran)	1	1	2	0	0	1	0	0	0	2	1	2	1	1	1	0	2	1	0	0
Dyseuaresta adelphica (Hendel)	0	1	0	0	0	1	1	0	1	-	0	2	1	1	1	0	0	0	1	0
Mesoclanis polana (Munro)	1	1	2	0	0	1	0	1	0	1	1	0	1	0	0	1	-	2	2	0
Scedella caffra (Loew)	0	1	1	0	0	1	0	2	0	1	1	2	1	0	0	1	-	2	0	0
Scedella praetexta (Loew)	0	1	1	0	0	1	0	2	0	1	2	2	1	0	0	1	-	2	0	0
Campiglossa achyrophori (Loew)	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
Campiglossa albiceps (Loew)	0	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	2	2	0
Campiglossa anchorata (Munro)	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1
Campiglossa anomalina (Bezzi)	0	0	1	0	0	1	0	0	0	0	0	2	1	1	0	0	0	0	0	1
Campiglossa argyrocephala (Loew)	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Campiglossa cain (Hering)	0	0	1	0	0	0	0	0	0	0	1	?	1	0	0	?	?	0	0	0
Campiglossa cassara (Walker)	0	1	0	0	0	1	1	0	?	-	0	2	1	?	?	0	0	?	1	0
Campiglossa clathrata (Loew)	0	0	1	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0
Campiglossa conspersa (Wulp)	0	0	1	0	0	1	0	1	0	0	0	0	1	1	1	0	1	0	0	0
Campiglossa contingens (Becker)	0	0	1	0	1	1	1	2	0	0	0	0	1	1	0	0	1	0	0	1
Campiglossa defasciata (Hering)	0	0	1	0	1	1	1	1	0	0	0	0	1	1	1	0	1	0	0	1
Campiglossa deserta (Hering)	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
Campiglossa despecta (Wulp)	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
Campiglossa difficilis (Hendel)	0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	0	1	0	0	0
Campiglossa doronici (Loew)	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	-	0	0	0
Campiglossa duplex (Becker)	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Campiglossa farinata (Novak)	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Campiglossa fenestrata (Munro)	0	0	1	0	0	1	0	0	0	0	0	?	1	1	0	?	?	2	0	0
Campiglossa fibulata (Wulp)	1	1	2	?	?	1	0	0	0	2	1	0	1	1	0	0	0	0	1	0
Campiglossa freyae (Lindner)	0	0	0	0	1	?	1	0	1	-	2	0	-	-	-	1	-	0	1	1

Table 1. (Continued)

Taxa \ Characters	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Campiglossa frolica (Dirlbek & Dirlbekova)	0	0	1	0	1	1	1	1	0	0	0	2	1	1	0	0	0	0	0	0
Campiglossa fuscata (Macquart)	0	1	1	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2	1	0
Campiglossa genalis (Thomson)	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Campiglossa granulata (Munro)	0	0	1	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0
Campiglossa guttella (Rondani)	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0
Campiglossa guttularis (Wulp)	0	0	1	?	0	0	0	1	0	0	0	0	?	?	?	0	0	?	1	0
Campiglossa hirayamae (Matsumura)	0	1	1	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	0
Campiglossa hyalina (Foote)	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0
Campiglossa ignobilis (Loew)	0	1	1	0	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0
Campiglossa intermedia (Zia)	0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0
Campiglossa irrorata (Fallen)	0	1	1	1	0	0	0	0	0	0	0	?	1	0	0	?	?	2	1	0
Campiglossa jamesi (Loew)	0	0	1	0	1	0	1	2	0	0	0	0	1	0	0	0	0	0	0	0
Campiglossa jugosa (Ito)	0	0	1	0	0	1	0	1	0	0	0	2	1	1	1	0	0	0	0	0
Campiglossa loewiana (Hendel)	0	0	1	0	2	0	1	1	0	0	0	0	1	1	0	0	1	0	1	0
Campiglossa luculenta (Wulp)	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0
Campiglossa luxorientis (Hering)	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Campiglossa media (Malloch)	0	0	2	0	0	1	0	0	0	?	1	2	?	?	?	0	0	?	0	0
Campiglossa messalina (Hering)	0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0
Campiglossa misella (Loew)	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0
Campiglossa obsoleta (Wulp)	1	1	2	0	0	1	0	0	0	2	1	2	1	?	?	0	0	?	0	0
Campiglossa pallidipennis (Cresson)	0	0	1	1	0	0	0	0	0	0	1	0	1	1	0	1	-	3	0	1
Campiglossa peringueyi (Bezzi)	0	0	1	0	0	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0
Campiglossa plantaginis (Haliday)	0	0	1	0	1	0	1	2	0	0	0	0	1	0	0	0	0	0	0	1
Campiglossa punctella (Fallen)	0	0	1	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
Campiglossa siphonina (Bezzi)	0	1	1	0	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0
Campiglossa spinata (Munro)	0	1	1	0	0	1	0	0	0	0	1	0	?	?	?	0	0	?	0	1
Campiglossa taenipennis (Hering)	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	0

Table 1. (Continued)

Taxa \ Characters	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Campiglossa trinotata (Foote)	0	0	1	1	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	0
Campiglossa umbritica (Munro)	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Campiglossa venezolensis (Hering)	0	?	1	0	0	0	?	0	0	?	0	0	?	?	?	0	0	?	0	0
Campiglossa n. sp. 1	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
Campiglossa n. sp. 2	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1
Campiglossa n. sp. 3	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0
Campiglossa n. sp. 4	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
Campiglossa n. sp. 5	0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0
Campiglossa n. sp. 6	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Campiglossa n. sp. 7	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
Campiglossa n. sp. 8	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0
Campiglossa n. sp. 9	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0
Campiglossa n. sp. 10	0	0	1	0	0	1	?	0	0	0	0	?	1	1	0	?	?	0	1	0
Campiglossa n. sp. 11	0	0	1	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0
Campiglossa n. sp. 12	0	0	1	0	0	0	0	0	0	0	1	?	1	0	0	0	0	0	1	0
Campiglossa n. sp. 13	0	0	1	0	0	0	0	0	0	0	0	?	1	1	0	?	?	0	0	0
Campiglossa n. sp. 14	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	0	1
Campiglossa n. sp. 15	0	0	1	1	0	0	0	0	0	0	1	?	1	?	1	?	-	3	3	1
Campiglossa n. sp. 16	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0
Campiglossa n. sp. 17	0	0	1	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Campiglossa n. sp. 18	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0
Campiglossa n. sp. 19	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Campiglossa n. sp. 20	0	0	1	0	0	1	0	1	0	0	0	?	1	1	0	?	?	0	1	0
Campiglossa n. sp. 21	0	0	1	0	0	0	0	0	0	0	0	?	1	1	0	?	?	0	1	0

Table 1. (Continued) character numbers 21-39

Taxa \ Characters	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Mastigolina rufocomata (Munro)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dioxyna chilensis (Macquart)	1	-	0	0	0	1	0	1	1	0	0	0	0	0	0	-	1	0	1
Dioxyna crockeri (Curran)	1	-	0	0	0	1	0	1	1	?	?	?	?	?	0	-	?	?	?
Dyseuaresta adelphica (Hendel)	1	-	1	2	2	1	1	-	0	1	0	1	-	0	0	-	0	-	3
Mesoclanis polana (Munro)	1	-	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	-	0
Scedella caffra (Loew)	1	-	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	-	3
Scedella praetexta (Loew)	1	-	0	0	2	0	0	1	0	1	0	0	1	0	2	0	0	-	3
Campiglossa achyrophori (Loew)	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1	1
Campiglossa albiceps (Loew)	0	1	0	2	2	1	0	0	0	1	0	0	0	0	1	1	1	1	2
Campiglossa anchorata (Munro)	1	-	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	-	0
Campiglossa anomalina (Bezzi)	1	-	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	0
Campiglossa argyrocephala (Loew)	1	-	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0
Campiglossa cain (Hering)	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	?
Campiglossa cassara (Walker)	1	-	1	2	2	0	1	0	0	?	?	?	?	?	?	-	?	?	?
Campiglossa clathrata (Loew)	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	2
Campiglossa conspersa (Wulp)	0	0	0	0	2	1	0	0	0	1	0	0	0	0	1	0	1	0	1
Campiglossa contingens (Becker)	0	1	0	2	2	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa defasciata (Hering)	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	0
Campiglossa deserta (Hering)	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	2
Campiglossa despecta (Wulp)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	1
Campiglossa difficilis (Hendel)	1	-	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1
Campiglossa doronici (Loew)	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	0
Campiglossa duplex (Becker)	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	0
Campiglossa farinata (Novak)	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	0
Campiglossa fenestrata (Munro)	0	1	0	1	1	1	1	0	0	0	0	0	0	0	1	0	0	-	?
Campiglossa fibulata (Wulp)	1	-	0	0	0	?	0	1	1	?	?	?	?	?	0	-	?	?	?
Campiglossa freyae (Lindner)	0	1	0	2	2	0	1	1	0	?	?	?	?	?	?	?	?	?	?

Table 1. (Continued)

Taxa \ Characters	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Campiglossa frolica (Dirlbek & Dirlbekova)	0	1	0	2	2	1	0	0	0	1	0	0	0	0	1	1	0	-	1
Campiglossa fuscata (Macquart)	1	-	0	2	2	1	0	0	0	0	0	0	0	0	1	-	0	-	1
Campiglossa genalis (Thomson)	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	0
Campiglossa granulata (Munro)	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	1	3
Campiglossa guttella (Rondani)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	-	1
Campiglossa guttularis (Wulp)	0	1	0	2	2	1	?	0	0	?	?	0	0	?	?	?	?	?	?
Campiglossa hirayamae (Matsumura)	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0
Campiglossa hyalina (Foote)	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	-	0
Campiglossa ignobilis (Loew)	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0
Campiglossa intermedia (Zia)	1	-	0	2	2	1	0	0	0	1	0	0	0	0	1	0	1	1	0
Campiglossa irrorata (Fallen)	1	-	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	?
Campiglossa jamesi (Loew)	0	1	0	2	2	1	0	0	0	1	0	0	0	0	1	1	0	-	0
Campiglossa jugosa (Ito)	1	-	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa loewiana (Hendel)	1	-	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	-	1
Campiglossa luculenta (Wulp)	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	1
Campiglossa luxorientis (Hering)	0	0	0	0	2	1	1	0	0	1	0	0	0	0	1	1	1	1	?
Campiglossa media (Malloch)	0	1	0	2	2	1	0	0	0	?	?	0	0	?	1	?	?	?	1
Campiglossa messalina (Hering)	0	1	0	2	0	1	0	0	0	1	0	0	0	0	1	0	1	0	0
Campiglossa misella (Loew)	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0
Campiglossa obsoleta (Wulp)	1	-	0	0	0	1	0	0	1	?	?	?	?	?	0	-	?	?	?
Campiglossa pallidipennis (Cresson)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	1
Campiglossa peringueyi (Bezzi)	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa plantaginis (Haliday)	0	1	0	2	2	1	1	0	0	1	0	0	0	0	1	1	0	0	2
Campiglossa punctella (Fallen)	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	-	0
Campiglossa siphonina (Bezzi)	0	1	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	-	1
Campiglossa spinata (Munro)	0	1	0	0	0	1	0	0	0	?	?	0	0	?	1	?	?	?	0
Campiglossa taenipennis (Hering)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	0	0

Table 1. (Continued)

Taxa \ Characters	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Campiglossa trinotata (Foote)	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	1
Campiglossa umbritica (Munro)	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	0
Campiglossa venezolensis (Hering)	0	0	0	0	0	1	0	0	0	?	?	0	0	?	?	?	?	?	?
Campiglossa n. sp. 1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa n. sp. 2	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	0	1
Campiglossa n. sp. 3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	0	1
Campiglossa n. sp. 4	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa n. sp. 5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa n. sp. 6	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa n. sp. 7	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa n. sp. 8	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	1
Campiglossa n. sp. 9	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	-	1
Campiglossa n. sp. 10	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	1	1	1	?
Campiglossa n. sp. 11	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	1	1	1	1
Campiglossa n. sp. 12	0	1	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	-	?
Campiglossa n. sp. 13	0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	1	1	1	?
Campiglossa n. sp. 14	0	1	0	0	0	1	?	0	0	1	0	0	0	0	1	0	0	-	2
Campiglossa n. sp. 15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	?
Campiglossa n. sp. 16	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	0
Campiglossa n. sp. 17	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	1
Campiglossa n. sp. 18	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	0
Campiglossa n. sp. 19	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	-	1
Campiglossa n. sp. 20	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	?
Campiglossa n. sp. 21	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	?

Final Considerations

Based on the proposed objectives the following considerations are presented.

The neotropical species of the genus *Campiglossa* are revised. *Campiglossa* has 30 neotropical species, of which 21 are new and are herein described. The taxonomic history, diagnosis, description, updating of the distribution, biology, type data information and material examined are presented for the genus and its species. In addition, illustrations and photographs that facilitate the recognition of each taxon are provided.

Based on the taxonomic study of the neotropical species and on the cladistic analysis of 71 representative species of *Campiglossa* from all biogeographical regions we made the following taxonomic decisions:

- The species *C. freyae* is transferred to the genus *Trupanea* Schrank.
- The species *C. cassara* is transferred to the genus *Dyseuaresta* Hendel.
- *C. enigma*, *C. fibulata*, and *C. obsoleta* are transferred to the genus *Dioxyna* Frey.

In the cladistic analysis *Campiglossa* was recovered as a monophyletic group based on one synapomorphy and two homoplasies (35:1, 2:0 and 21:0) (Fig. 286).

Campiglossa and *Dioxyna* are sister-groups based on one synapomorphy 33:0 and two homoplasies 26:1 and 39:1. This result corroborates the close relationship Novak (1974), White (1988) and Headrick & Goeden (1999) reported between *Campiglossa* and *Dioxyna*.

The interspecific relationships within *Campiglossa* are not well resolved, and other analyses with larger number of characters and application of other tools, such as biological and molecular data, have to be performed.

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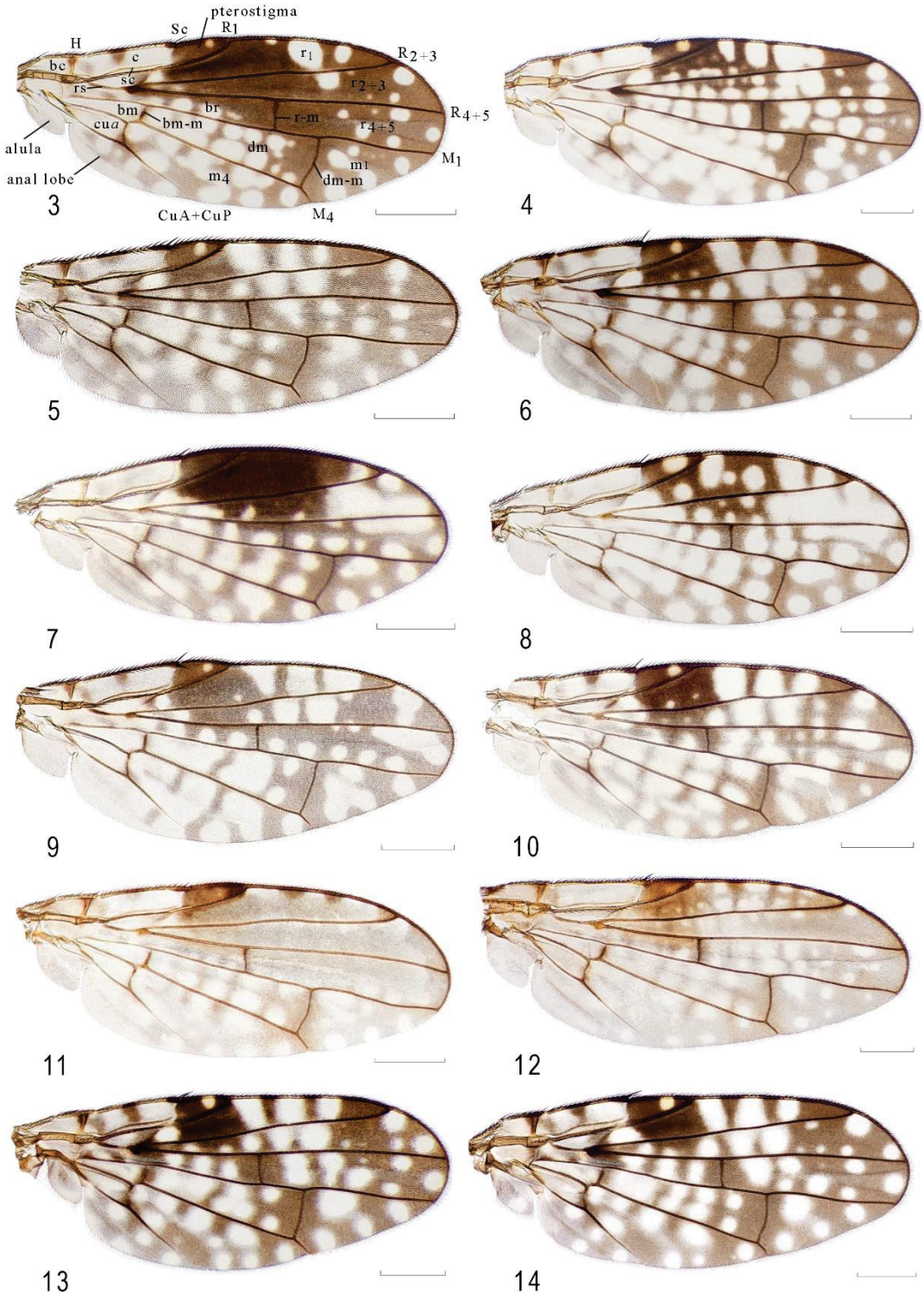
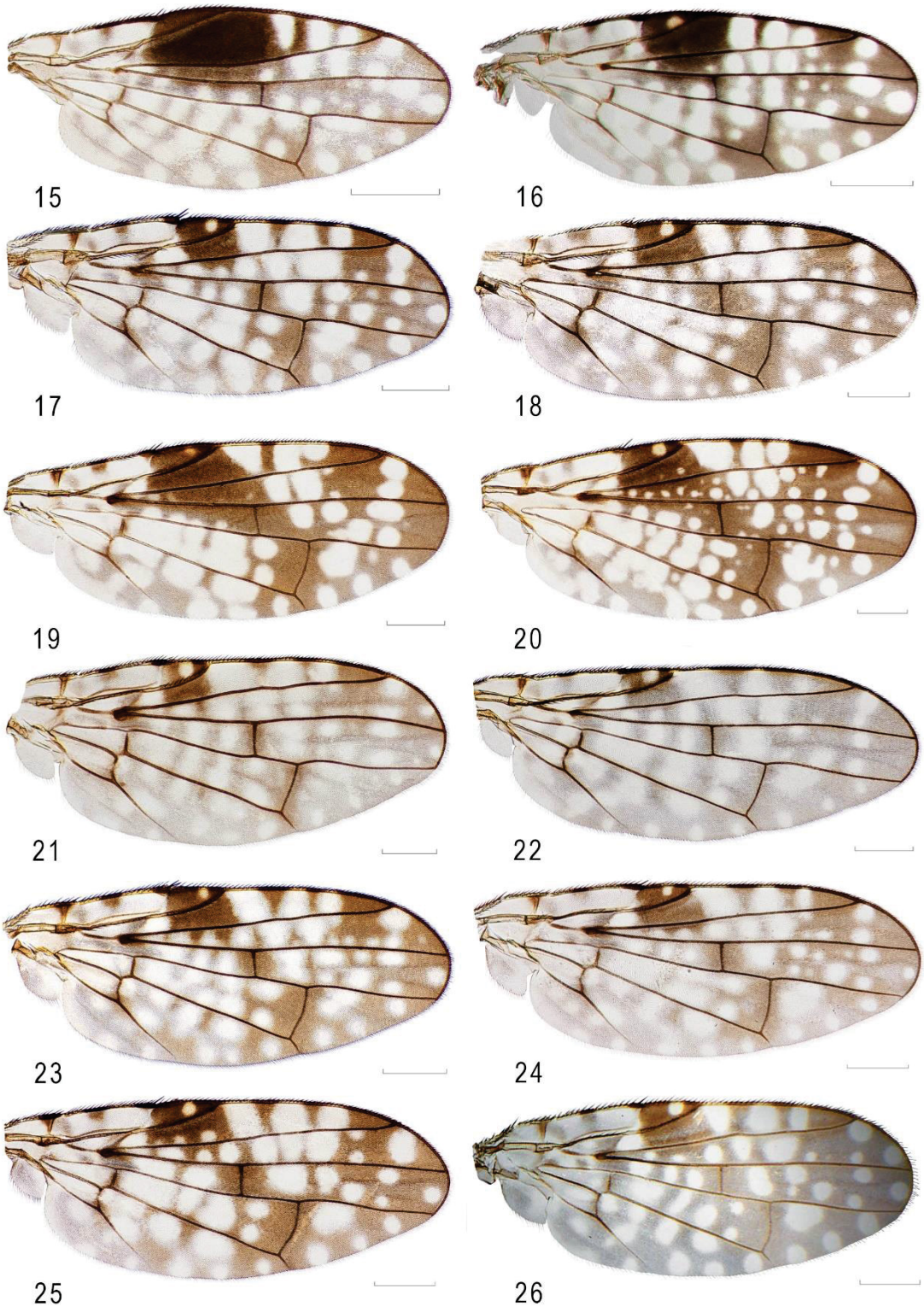
FIGURES

FIGURE 1. Habitus, dorsal: 1 (♀), *Campiglossa taenipennis*. Scale bar = 0.5 mm.

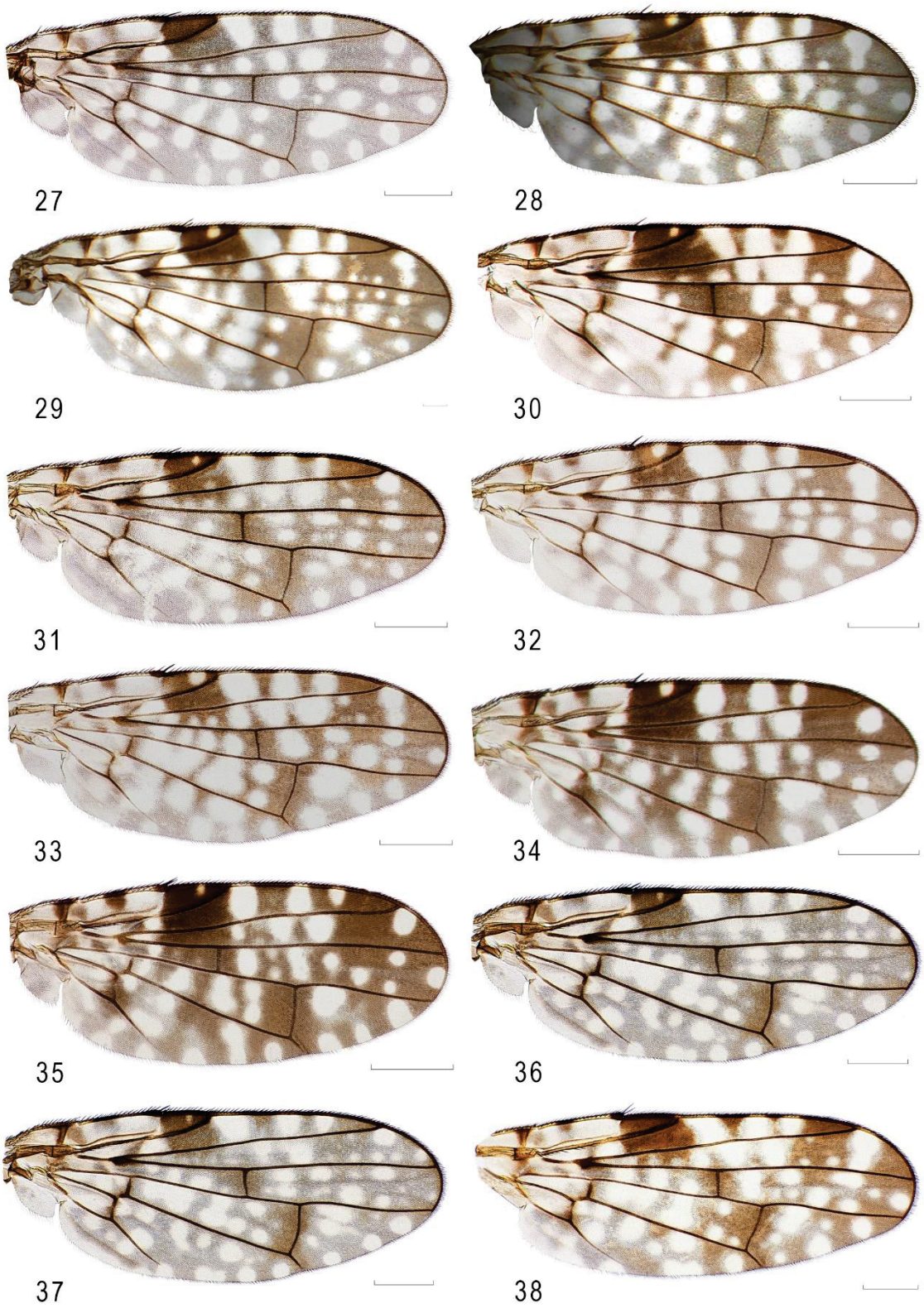
FIGURE 2. Habitus, dorsal: 1 (♂), *Campiglossa conspersa*. Scale bar = 0.5 mm.



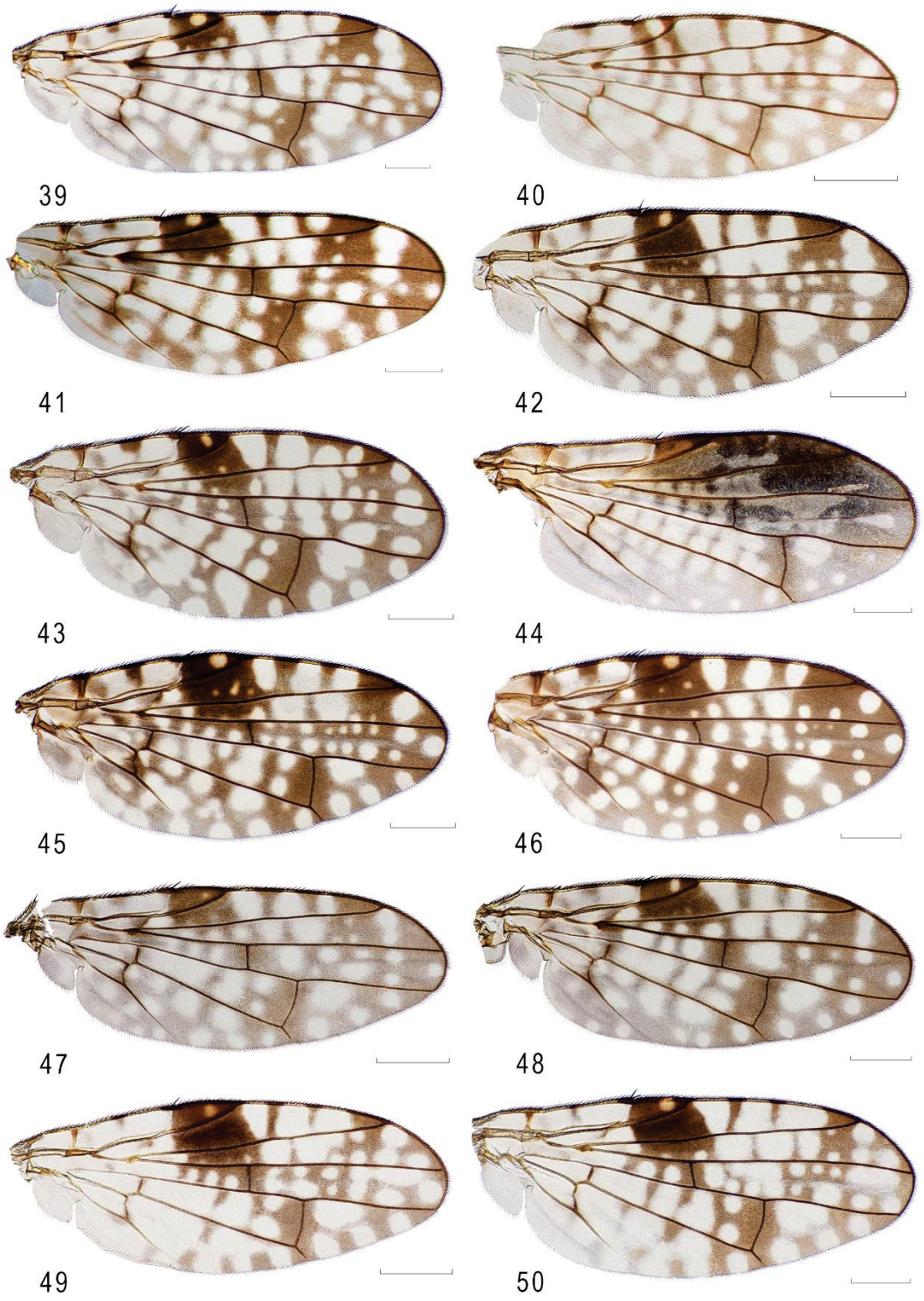
FIGURES 3–14. Wings: 3–4 (♂♀), *C. conspersa* (USNMENT00118361, USNMENT00118850); 5–6 (♂♀), *C. despecta* (USNMENT00119968–69); 7–8 (♂♀), *C. hyalina* (USNMENT00104362–63); 9–10 (♂♀), *C. luculenta* (USNMENT00118668, USNMENT00118657); 11–12 (♂♀), *C. pallidipennis* (USNMENT00104148, USNMENT00119971); 13–14 (♂♀), *C. taenipennis* (USNMENT00118845–46). Scale bar = 0.5 mm.



FIGURES 15–26. Wings: 15–16 (♂♀), *C. trinotata* (USNMENT00120049, USNMENT01355073); 17–18 (♂♀), *Campiglossa* n. sp. 1 (USNMENT00118399, USNMENT00118727); 19–20 (♂♀), *Campiglossa* n. sp. 2 (USNMENT00118371–72); 21–23 (♂♀♂), *Campiglossa* n. sp. 3 (USNMENT00118414, USNMENT00118374, USNMENT01355058); 24–25 (♂♀), *Campiglossa* n. sp. 4 (USNMENT00118383–84); 26 (♂), *Campiglossa* n. sp. 5 (USNMENT00120068). Scale bar = 0.5 mm.



FIGURES 27–38. Wings: 27 (♀), *Campiglossa* n. sp. 5 (USNMENT00119051); 28–29 (♂♀), *Campiglossa* n. sp. 6 (USNMENT01232016, USNMENT00120024); 30-31 (♂♀), *Campiglossa* n. sp. 7 (USNMENT00119020, USNMENT00118378); 32–33 (♂♀), *Campiglossa* n. sp. 8 (USNMENT00670816–17); 34–35 (♂♀), *Campiglossa* n. sp. 9 (USNMENT01355057, USNMENT00119967); 36–37 (♂), *Campiglossa* n. sp. 10 (USNMENT00120052); 38 (♂), *Campiglossa* n. sp. 11 (USNMENT00118401). Scale bar = 0.5 mm.

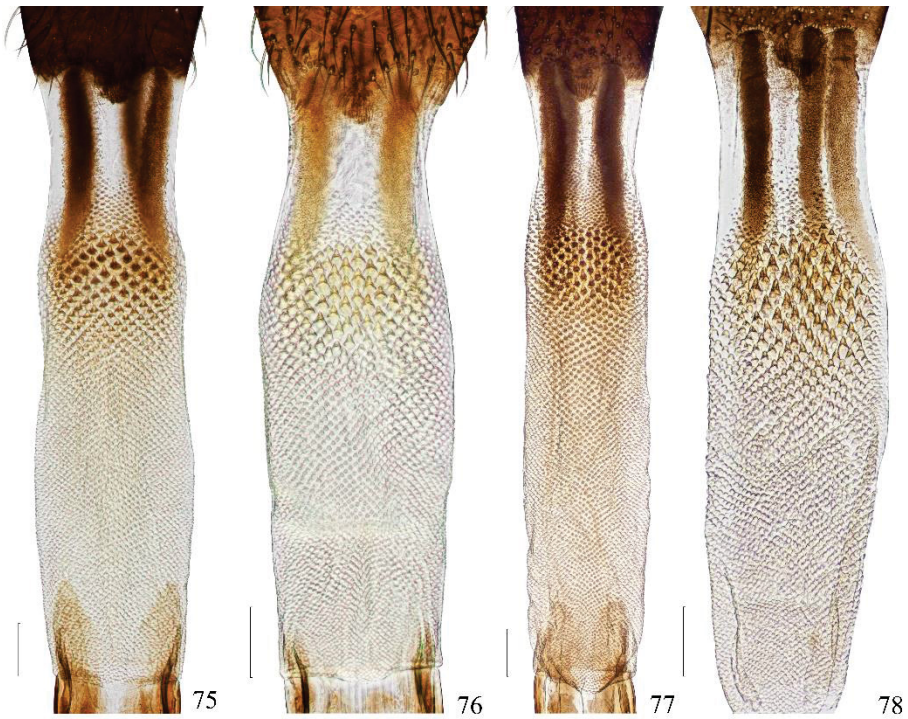


FIGURES 39–50. Wings: 39 (♀), *Campiglossa* n. sp. 11 (USNMENT00118400); 40 (♂), *Campiglossa* n. sp. 12 (USNMENT01355071); 41 (♂), *Campiglossa* n. sp. 13 (USNMENT00118778); 42–43 (♂♀), *Campiglossa* n. sp. 14 (USNMENT00875888, USNMENT00120046); 44 (♂), *Campiglossa* n. sp. 15 (USNMENT00119970); 45–46 (♂♀), *Campiglossa* n. sp. 16 (USNMENT00120050, USNMENT00120074); 47–48 (♂♀), *Campiglossa* n. sp. 17 (USNMENT00120040, USNMENT00120043); 49–50 (♂♀), *Campiglossa* n. sp. 18 (USNMENT00120028, USNMENT01355068). Scale bar = 0.5 mm.

FIGURES 51–54. Wings: 51–52 (♂♀), *Campiglossa* n. sp. 19 (USNMENT01355069, USNMENT00119093); 53 (♂), *Campiglossa* n. sp. 20 (USNMENT01355064); 54 (♂), *Campiglossa* n. sp. 21 (USNMENT00119052). Scale bar = 0.5 mm.

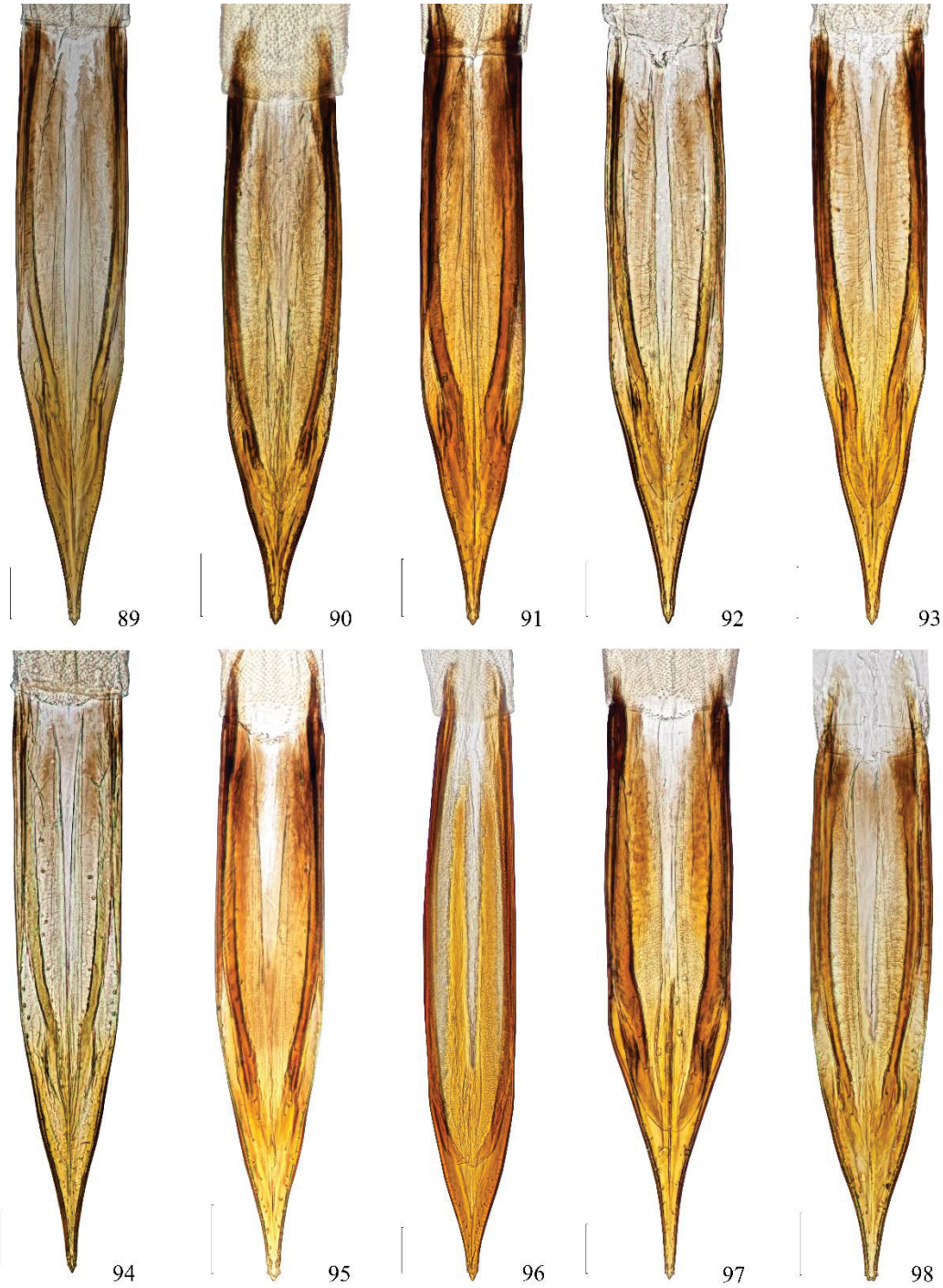
FIGURES 55–64. Eversible membranes: 56, *C. conspersa* (USNMENT00118897); 57, *C. despecta* (USNMENT00118817); 58, *P. hyalina* (USNMENT00104364); 59, *C. luculenta* (USNMENT00118690); 60, *C. pallidipennis* (USNMENT01355067); 61, *C. taenipennis* (USNMENT00119051); 62, *C. trinotata* (USNMENT01355070); 63, *Campiglossa* n. sp. 1 (USNMENT00118398); 64, *Campiglossa* n. sp. 2 (USNMENT01355059). Scale bar = 0.10 mm.

FIGURES 65–74. Eversible membranes: 65, *Campiglossa* n. sp. 3 (USNMENT00118374); 66, *Campiglossa* n. sp. 4 (USNMENT00118858); 67, *Campiglossa* n. sp. 5 (USNMENT00120067); 68, *Campiglossa* n. sp. 6 (USNMENT00212539); 69-70, *Campiglossa* n. sp. 7 (USNMENT00118379, USNMENT00119037); 71, *Campiglossa* n. sp. 8 (USNMENT00670816); 72, *Campiglossa* n. sp. 9 (USNMENT00119967); 73, *Campiglossa* n. sp. 11 (USNMENT00118400); 74, *Campiglossa* n. sp. 14 (USNMENT00120046). Scale bar = 0.10 mm.

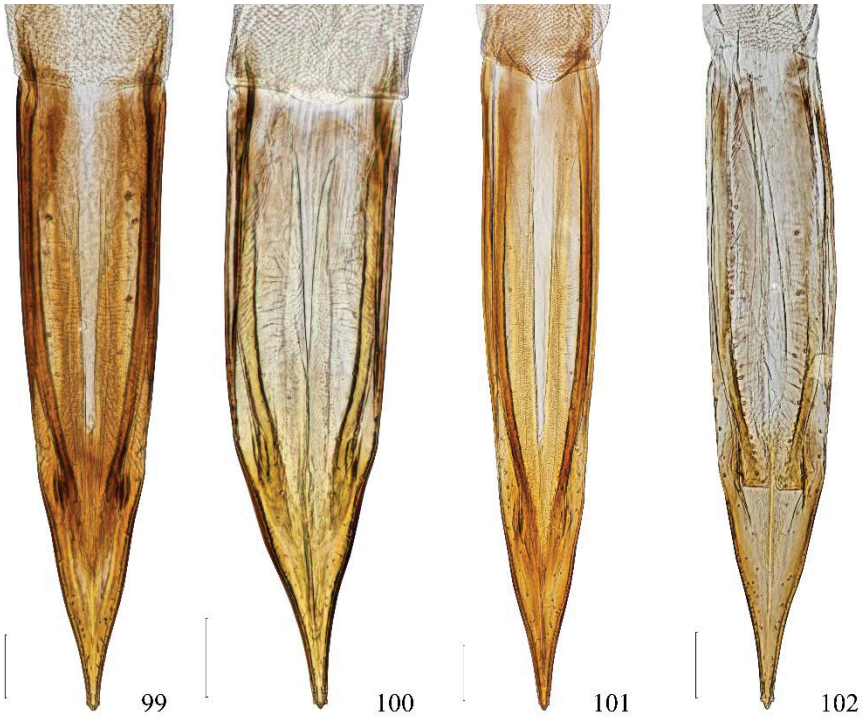


FIGURES 75–78. Eversible membranes: 75, *Campiglossa* n. sp. 16 (USNMENT00120074); 76, *Campiglossa* n. sp. 17 (USNMENT00120048); 77, *Campiglossa* n. sp. 18 (USNMENT01355058); 78, *Campiglossa* n. sp. 19 (USNMENT00119093). Scale bar = 0.10 mm.

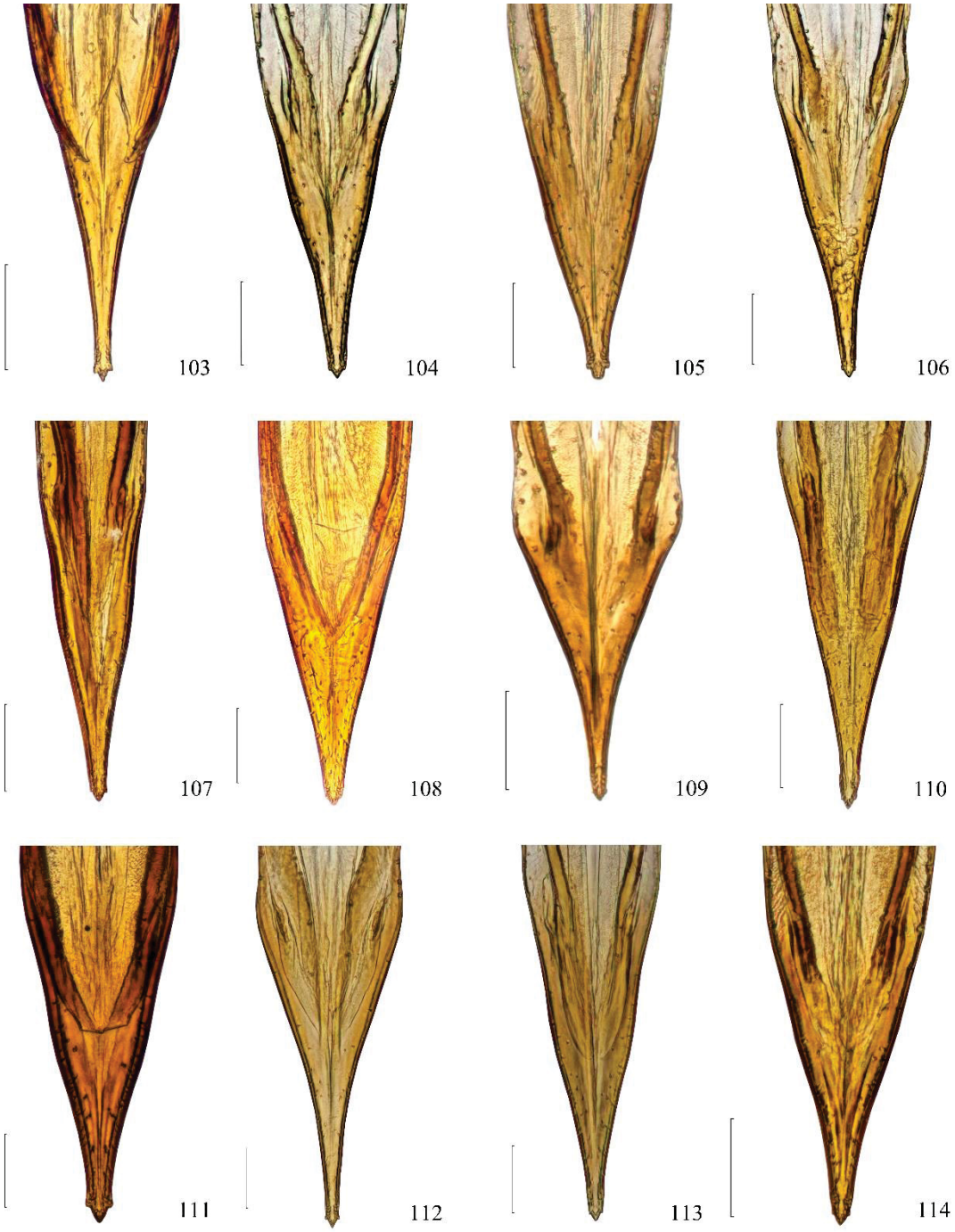
FIGURES 79–88. Aculei: 79, *C. conspersa* (USNMENT00118897); 80, *C. despecta* (USNMENT00118817); 81, *C. hyalina* (USNMENT00104364); 82, *C. luculenta* (USNMENT00118690); 83, *C. pallidipennis* (USNMENT01355067); 84, *C. taenipennis* (USNMENT00119051); 85, *C. trinotata* (USNMENT01355070); 86, *Campiglossa* n. sp. 1 (USNMENT00118398); 87, *Campiglossa* n. sp. 2 (USNMENT01355059); 88, *Campiglossa* n. sp. 3 (USNMENT00118374). Scale bar = 0.10 mm.



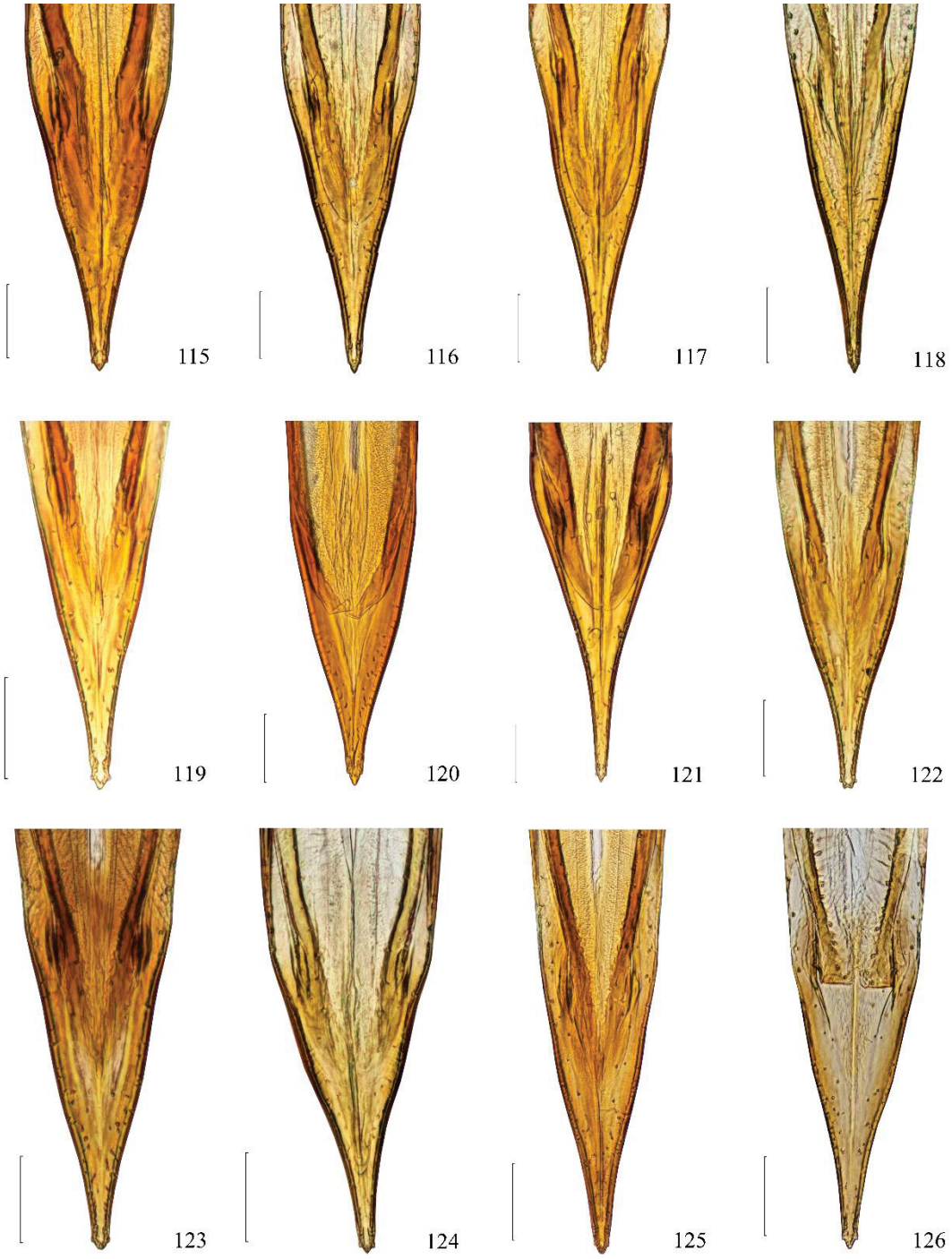
FIGURES 89–98. Aculei: 89, *Campiglossa* n. sp. 4 (USNMENT00118858); 90, *Campiglossa* n. sp. 5 (USNMENT00120067); 91, *Campiglossa* n. sp. 6 (USNMENT00212539); 92–93, *Campiglossa* n. sp. 7 (USNMENT00118379, USNMENT00119037); 94, *Campiglossa* n. sp. 8 (USNMENT00670816); 95, *Campiglossa* n. sp. 9 (USNMENT00119967); 96, *Campiglossa* n. sp. 11 (USNMENT00118400); 97, *Campiglossa* n. sp. 3 (USNMENT00118374); 98, *Campiglossa* n. sp. 14 (USNMENT00120046). Scale bar = 0.10 mm.



FIGURES 99–102. Aculei: 99, *Campiglossa* n. sp. 16 (USNMENT00120074); 100, *Campiglossa* n. sp. 17 (USNMENT00120048); 101, *Campiglossa* n. sp. 18 (USNMENT01355058); 102, *Campiglossa* n. sp. 19 (USNMENT00119093). Scale bar = 0.10 mm.



FIGURES 103–114. Aculeus tips: 103, *C. conspersa* (USNMENT00118897); 104, *C. despecta* (USNMENT00118817); 105, *C. hyalina* (USNMENT00104364); 106, *C. luculenta* (USNMENT00118690); 107, *C. pallidipennis* (USNMENT01355067); 108, *C. taenipennis* (USNMENT00119051); 109, *C. trinotata* (USNMENT01355070); 110, *Campiglossa* n. sp. 1 (USNMENT00118398); 111, *Campiglossa* n. sp. 2 (USNMENT01355059); 112, *Campiglossa* n. sp. 3 (USNMENT00118374); 113, *Campiglossa* n. sp. 4 (USNMENT00118858); 114, *Campiglossa* n. sp. 5 (USNMENT00120067). Scale bar = 0.10 mm.

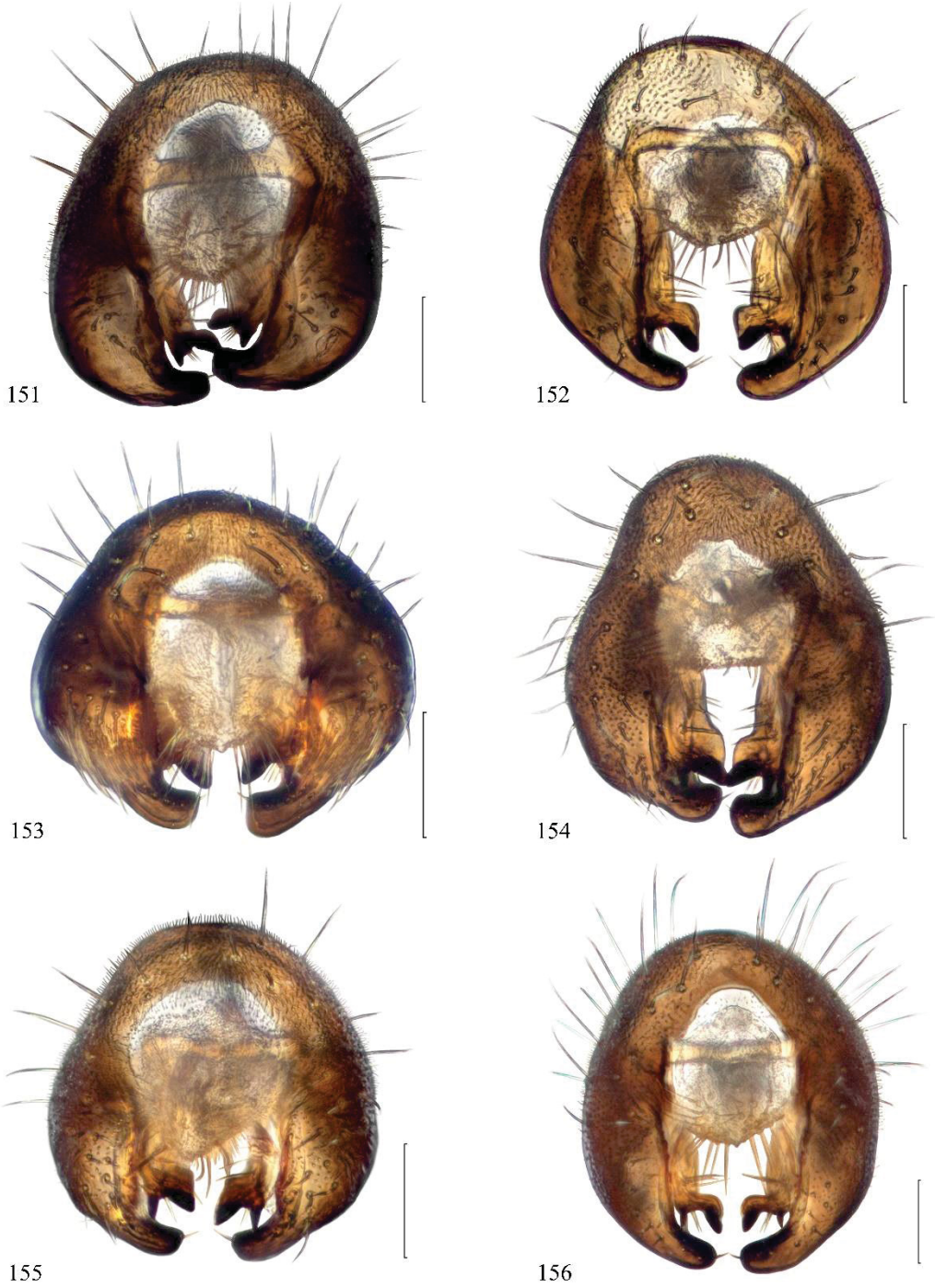


FIGURES 115–126. Aculeus tips: 115, *Campiglossa* n. sp. 6 (USNMENT00212539); 116–117, *Campiglossa* n. sp. 7 (USNMENT00118379, USNMENT00119037); 118, *Campiglossa* n. sp. 8 (USNMENT00670816); 119, *Campiglossa* n. sp. 9 (USNMENT00119967); 120, *Campiglossa* n. sp. 11 (USNMENT00118400); 121, *Campiglossa* n. sp. 3 (USNMENT00118374); 122, *Campiglossa* n. sp. 14 (USNMENT00120046); 123, *Campiglossa* n. sp. 16 (USNMENT00120074); 124, *Campiglossa* n. sp. 17 (USNMENT00120048); 125, *Campiglossa* n. sp. 18 (USNMENT01355058); 126, *Campiglossa* n. sp. 19 (USNMENT00119093). Scale bar = 0.10 mm.

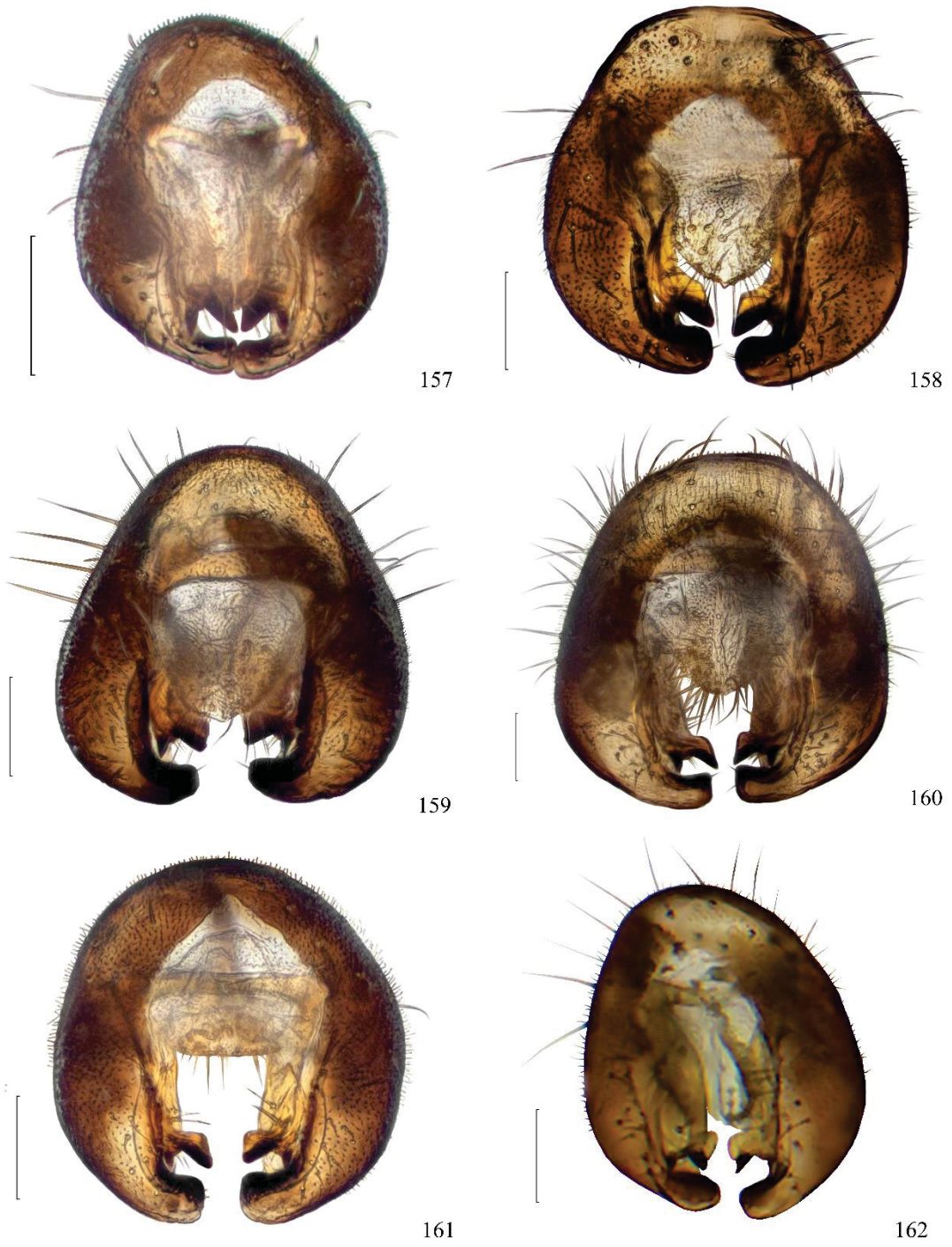
FIGURES 127–135. Spermathecae: 127, *C. conspersa* (USNMENT00118897); 128, *C. despecta* (USNMENT00118817); 129, *C. hyalina* (USNMENT00104364); 130, *C. luculenta* (USNMENT00118690); 131, *C. pallidipennis* (USNMENT01355067); 132, *C. taenipennis* (USNMENT00119051); 133, *C. trinotata* (USNMENT01355070); 134, *Campiglossa* n. sp. 1 (USNMENT00118398); 135 *Campiglossa* n. sp. 2 (USNMENT01355059). Scale bar = 0.10 mm.

FIGURES 136–144. Spermathecae: 136, *Campiglossa* n. sp. 3 (USNMENT00118374); 137, *Campiglossa* n. sp. 4 (USNMENT00118858); 138, *Campiglossa* n. sp. 5 (USNMENT00120067); 139, *Campiglossa* n. sp. 6 (USNMENT00212539); 140-141, *Campiglossa* n. sp. 7 (USNMENT00118379, USNMENT00119037); 142, *Campiglossa* n. sp. 8 (USNMENT00670816); 143, *Campiglossa* n. sp. 9 (USNMENT00119967); 144, *Campiglossa* n. sp. 11 (USNMENT00118400). Scale bar = 0.10 mm.

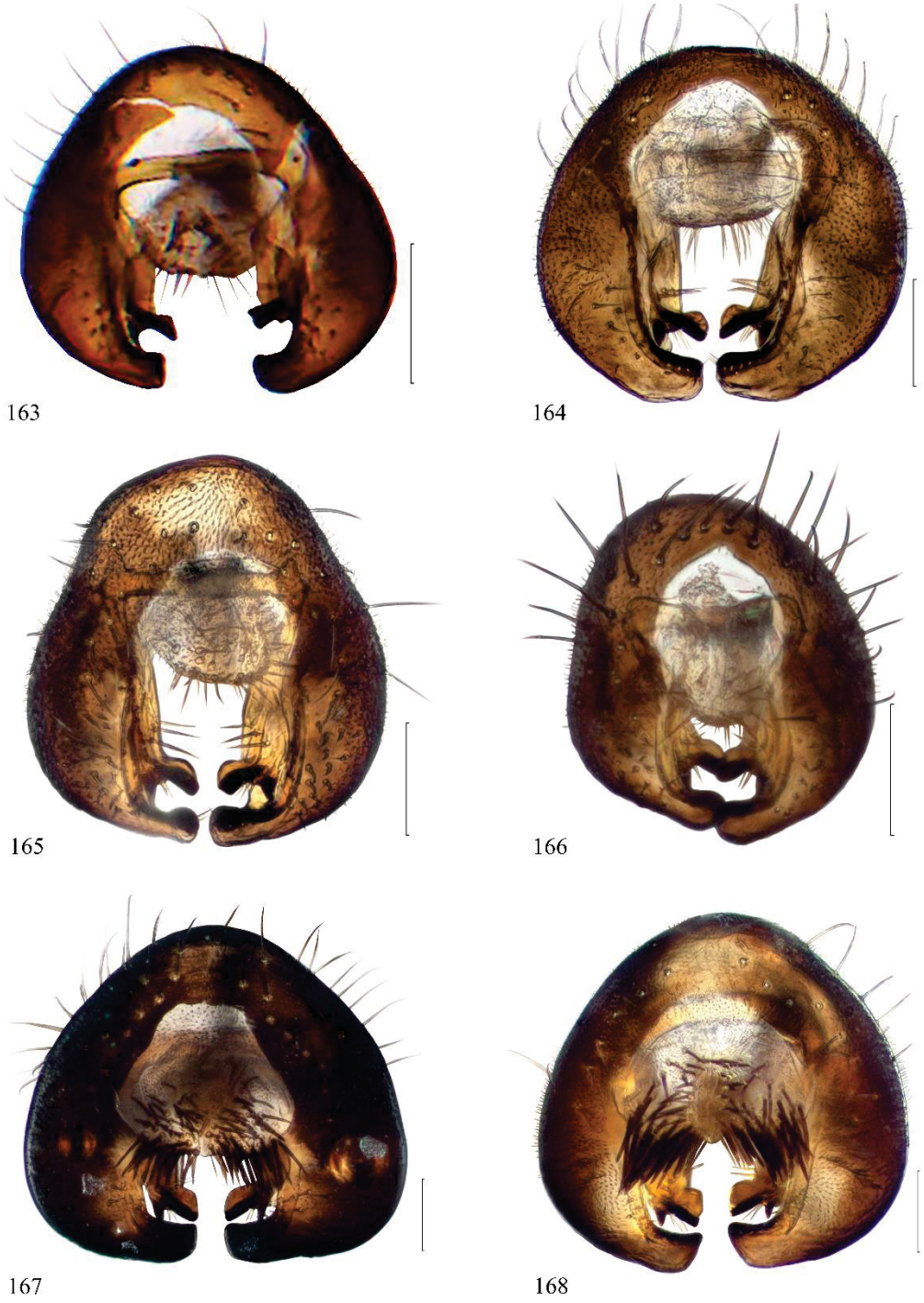
FIGURES 145–150. Spermathecae: 145, *Campiglossa* n. sp. 3 (USNMENT00118374); 146, *Campiglossa* n. sp. 14 (USNMENT00120046); 147, *Campiglossa* n. sp. 16 (USNMENT00120074); 148, *Campiglossa* n. sp. 17 (USNMENT00120048); 149, *Campiglossa* n. sp. 18 (USNMENT01355058); 150, *Campiglossa* n. sp. 19 (USNMENT00119093). Scale bar = 0.10 mm.



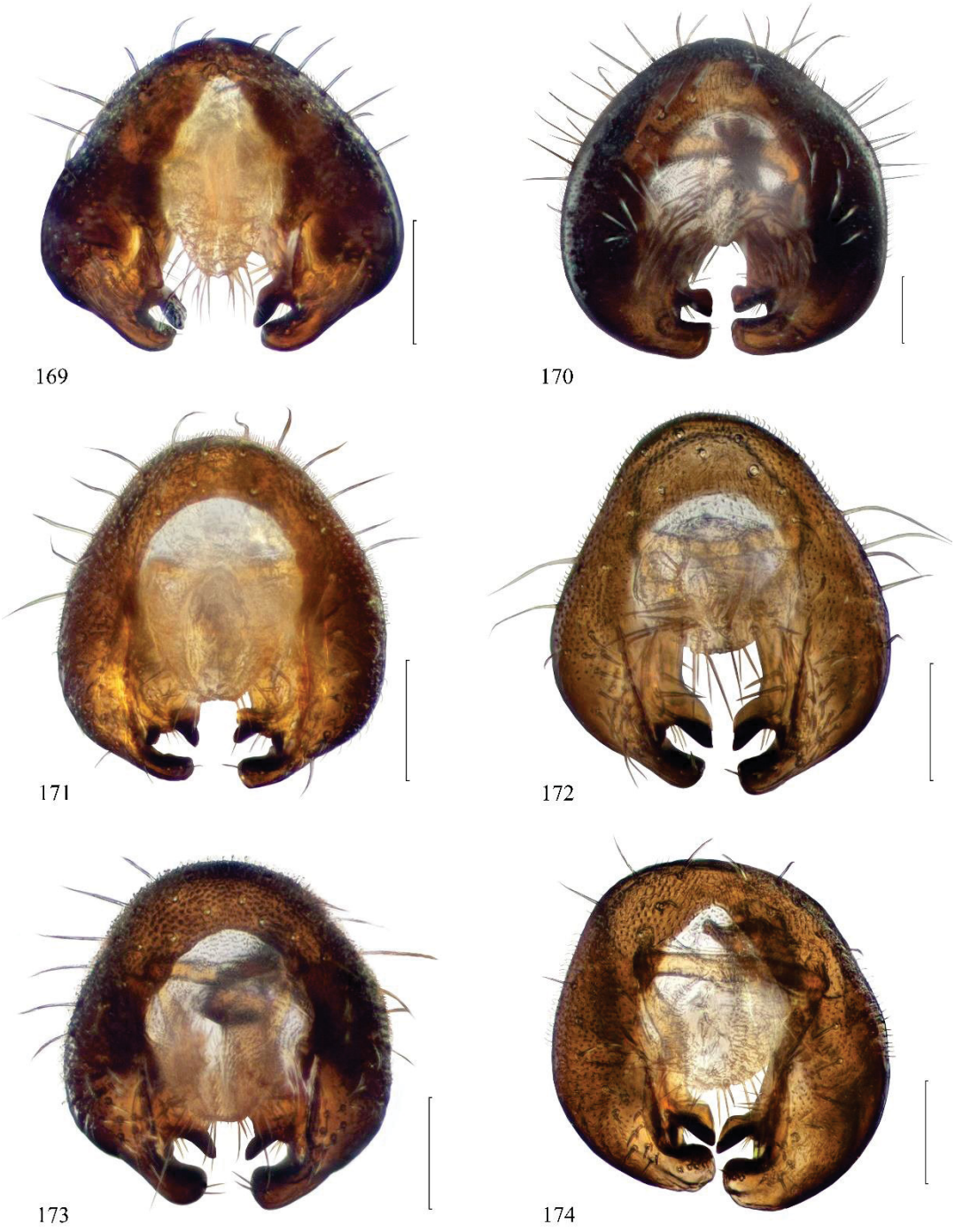
FIGURES 151–156. Male terminalia (epandrium, surstyli and proctiger, posterior): 151, *C. conspersa* (USNMENT00118361); 152 *C. despecta* (USNMENT00118386); 153, *C. hyalina* (USNMENT00104363); 154, *C. luculenta* (USNMENT00050156); 155, *C. pallidipennis* (USNMENT01355066); 156, *C. taenipennis* (USNMENT00120048). Scale bar = 0.10 mm.



FIGURES 157–162. Male terminalia (epandrium, surstyli and proctiger, posterior): 157, *C. trinotata* (USNMENT00120049); 158 *Campiglossa* n. sp. 1 (USNMENT00118399); 159, *Campiglossa* n. sp. 2 (USNMENT01355063); 160, *Campiglossa* n. sp. 3 (USNMENT01355058); 161, *Campiglossa* n. sp. 4 (USNMENT00118383); 162, *Campiglossa* n. sp. 5 (USNMENT00120068). Scale bar = 0.10 mm.

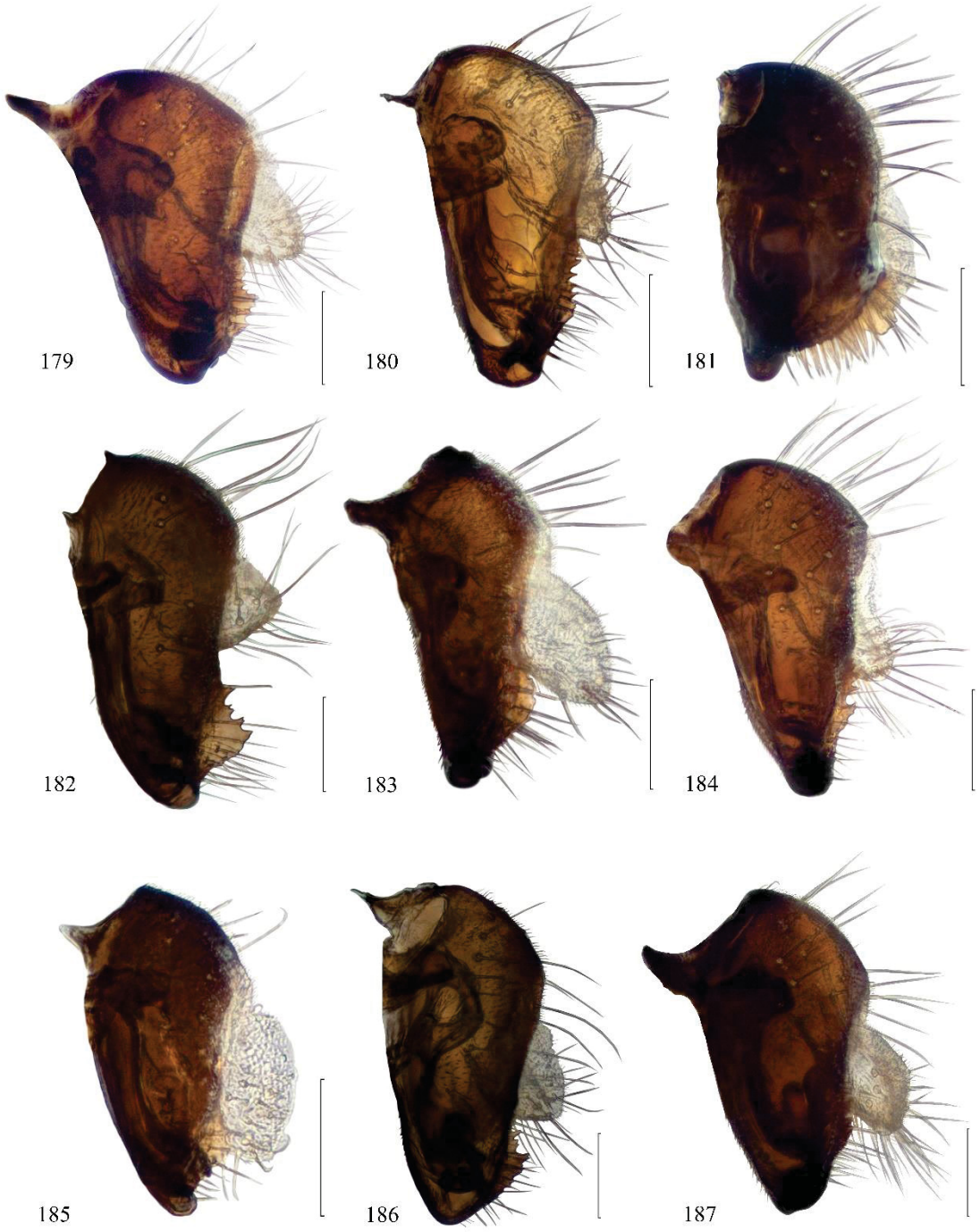


FIGURES 163–168. Male terminalia (epandrium, surstyli and proctiger, posterior): 163, *Campiglossa* n. sp. 6 (USNMENT01232016); 164, *Campiglossa* n. sp. 7 (USNMENT00119008); 165, *Campiglossa* n. sp. 8 (USNMENT00670813); 166, *Campiglossa* n. sp. 9 (USNMENT01355057); 167, *Campiglossa* n. sp. 10 (USNMENT00120052); 168, *Campiglossa* n. sp. 11 (USNMENT00118401). Scale bar = 0.10 mm.

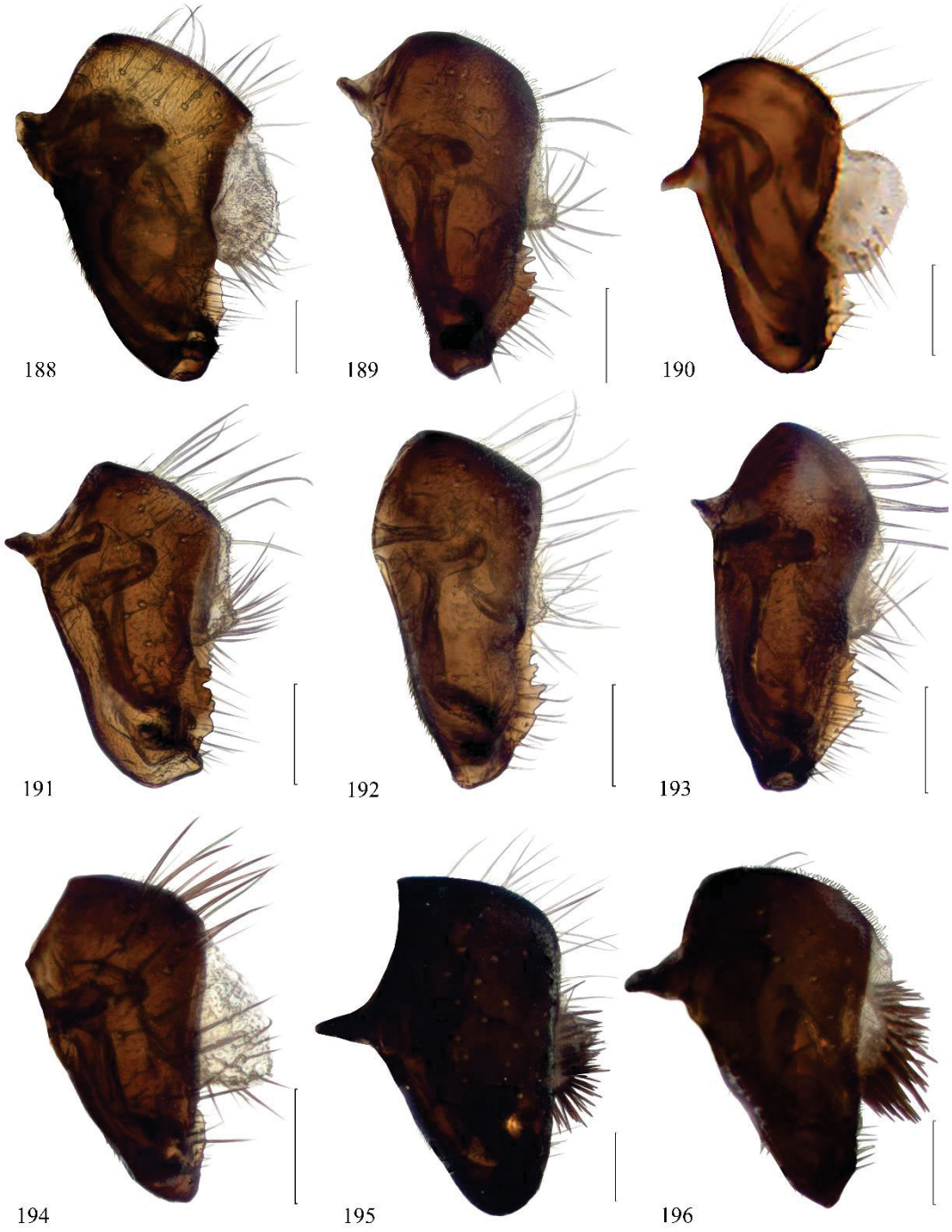


FIGURES 169–174. Male terminalia (epandrium, surstyli and proctiger, posterior): 169, *Campiglossa* n. sp. 12 (USNMENT01355071); 170, *Campiglossa* n. sp. 13 (USNMENT00118778); 171, *Campiglossa* n. sp. 14 (USNMENT00118383); 172, *Campiglossa* n. sp. 15 (USNMENT01355061); 173, *Campiglossa* n. sp. 16 (USNMENT00120050); 174, *Campiglossa* n. sp. 17 (USNMENT00120041). Scale bar = 0.10 mm.

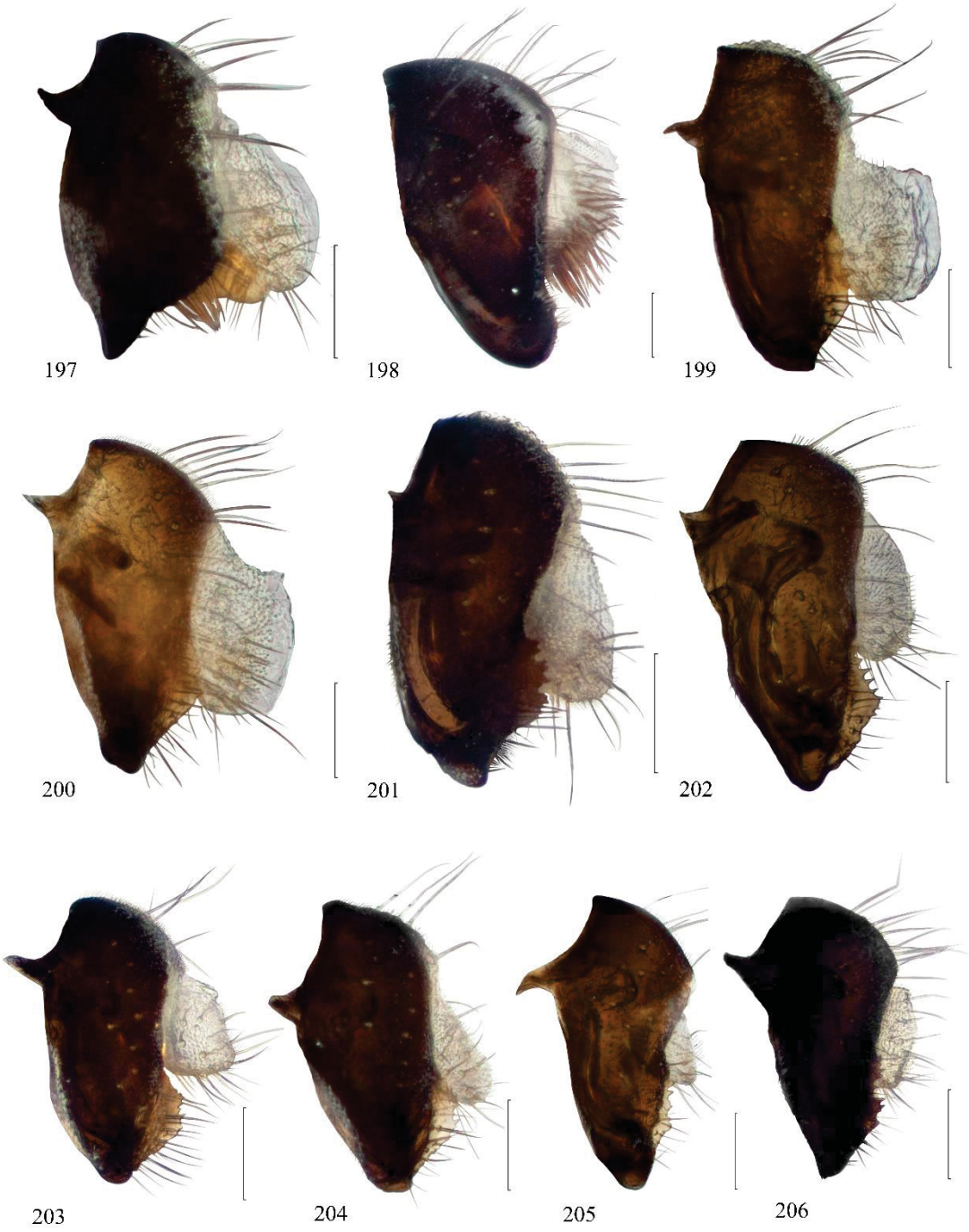
FIGURES 175–178. Male terminalia (epandrium, surstyli and proctiger, posterior): 175, *Campiglossa* n. sp. 18 (USNMENT00120026); 176, *Campiglossa* n. sp. 19 (USNMENT01355062); 177, *Campiglossa* n. sp. 20 (USNMENT01355064); 178, *Campiglossa* n. sp. 21 (USNMENT00104355). Scale bar = 0.10 mm.



FIGURES 179–187. Male terminalia (epandrium, surstyli and proctiger, lateral): 179, *C. conspersa* (USNMENT00118361); 180, *C. despecta* (USNMENT00118386); 181, *C. hyalina* (USNMENT00104363); 182, *C. luculenta* (USNMENT00050156); 183, *C. pallidipennis* (USNMENT01355066); 184, *C. taenipennis* (USNMENT00120048); 185, *C. trinotata* (USNMENT00120049); 186, *Campiglossa* n. sp. 1 (USNMENT00118399); 187, *Campiglossa* n. sp. 2 (USNMENT01355063). Scale bar = 0.10 mm.



FIGURES 188–196. Male terminalia (epandrium, surstyli and proctiger, lateral): 188, *Campiglossa* n. sp. 3 (USNMENT01355058); 189, *Campiglossa* n. sp. 4 (USNMENT00118383); 190, *Campiglossa* n. sp. 5 (USNMENT00120068); 191, *Campiglossa* n. sp. 6 (USNMENT01232016); 192, *Campiglossa* n. sp. 7 (USNMENT00119008); 193, *Campiglossa* n. sp. 8 (USNMENT00670813); 194, *Campiglossa* n. sp. 9 (USNMENT01355057); 195, *Campiglossa* n. sp. 10 (USNMENT00120052); 196, *Campiglossa* n. sp. 11 (USNMENT00118401). Scale bar = 0.10 mm.



FIGURES 197–206. Male terminalia (epandrium, surstyli and proctiger, lateral): 197, *Campiglossa* n. sp. 12 (USNMENT01355071); 198, *Campiglossa* n. sp. 13 (USNMENT00118778); 199, *Campiglossa* n. sp. 14 (USNMENT00118383); 200, *Campiglossa* n. sp. 15 (USNMENT01355061); 201, *Campiglossa* n. sp. 16 (USNMENT00120050); 202, *Campiglossa* n. sp. 17 (USNMENT00120041); 203, *Campiglossa* n. sp. 18 (USNMENT00120026); 204, *Campiglossa* n. sp. 19 (USNMENT01355062); 205, *Campiglossa* n. sp. 20 (USNMENT01355064); 206, *Campiglossa* n. sp. 21 (USNMENT00104355). Scale bar = 0.10 mm.

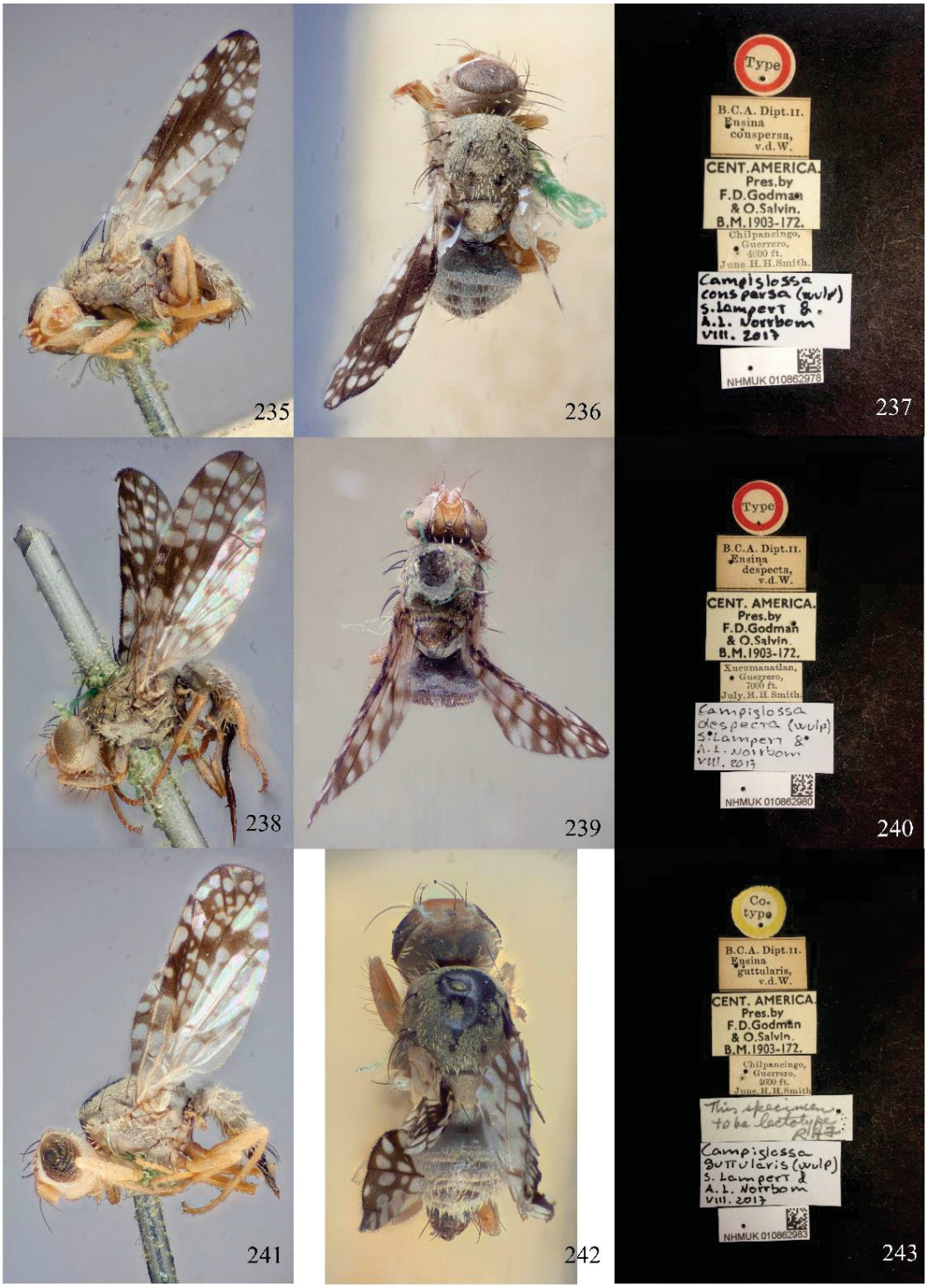
FIGURES 207–212. Male terminalia (glandes, lateral): 207, *C. conspersa* (USNMENT00118361); 208, *C. despecta* (USNMENT00118386); 209, *C. hyalina* (USNMENT00104363); 210, *C. luculenta* (USNMENT00050156); 211, *C. pallidipennis* (USNMENT01355066); 212, *C. taenipennis* (USNMENT00104363). Scale bar = 0.10 mm.

FIGURES 213–218. Male terminalia (glandes, lateral): 213, *C. trinotata* (USNMENT00120049); 214, *Campiglossa* n. sp. 1 (USNMENT00118399); 215, *Campiglossa* n. sp. 2 (USNMENT01355063); 216, *Campiglossa* n. sp. 3 (USNMENT01355058); 217, *Campiglossa* n. sp. 4 (USNMENT00118383); 218, *Campiglossa* n. sp. 5 (USNMENT00120068). Scale bar = 0.10 mm.

FIGURES 219–224. Male terminalia (glandes, lateral): 219, *Campiglossa* n. sp. 6 (USNMENT01232016); 220, *Campiglossa* n. sp. 7 (USNMENT00119008); 221, *Campiglossa* n. sp. 8 (USNMENT00670813); 222, *Campiglossa* n. sp. 9 (USNMENT01355057); 223, *Campiglossa* n. sp. 10 (USNMENT00120052); 224, *Campiglossa* n. sp. 11 (USNMENT00118401). Scale bar = 0.10 mm.

FIGURES 225–230. Male terminalia (glandes, lateral): 225, *Campiglossa* n. sp. 12 (USNMENT01355071); 226, *Campiglossa* n. sp. 13 (USNMENT00118778); 227, *Campiglossa* n. sp. 14 (USNMENT00118383); 228, *Campiglossa* n. sp. 15 (USNMENT01355061); 229, *Campiglossa* n. sp. 16 (USNMENT00120050); 230, *Campiglossa* n. sp. 17 (USNMENT00120041). Scale bar = 0.10 mm.

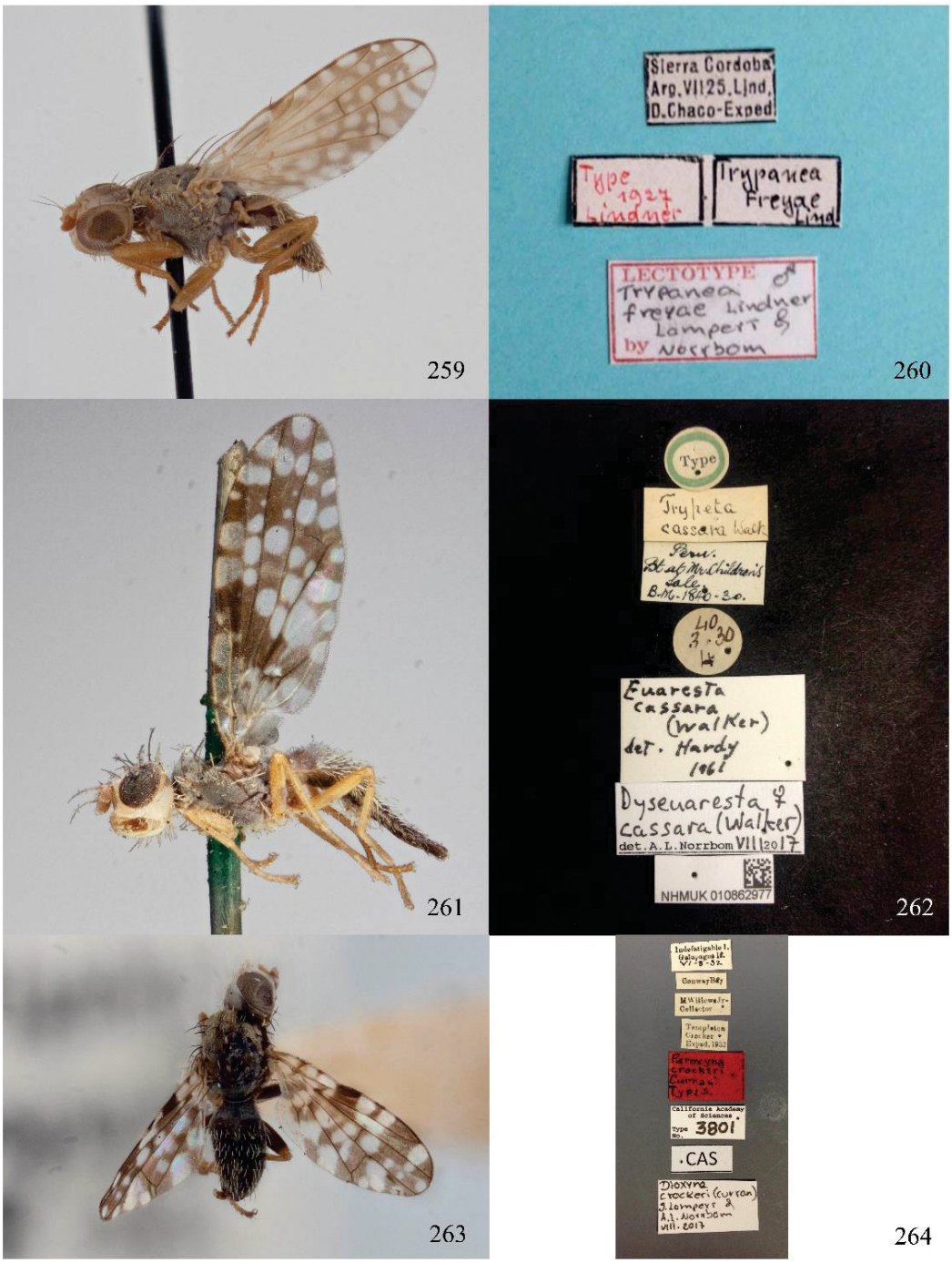
FIGURES 231–234. Male terminalia (glandes, lateral): 231, *Campiglossa* n. sp. 18 (USNMENT00120026); 232, *Campiglossa* n. sp. 19 (USNMENT01355062); 233, *Campiglossa* n. sp. 20 (USNMENT01355064); 234, *Campiglossa* n. sp. 21 (USNMENT00104355). Scale bar = 0.10 mm.



FIGURES 235–243. *Campiglossa conspersa* (Holotype): 235, lateral view; 236, dorsal view; 237, labels. *C. despecta* (Holotype): 238, dorsal view; 239, lateral view; 240, labels. *C. guttularis* (Lectotype): 241, lateral view; 242, dorsal view; 243, labels. Photos by Silvana Lampert.

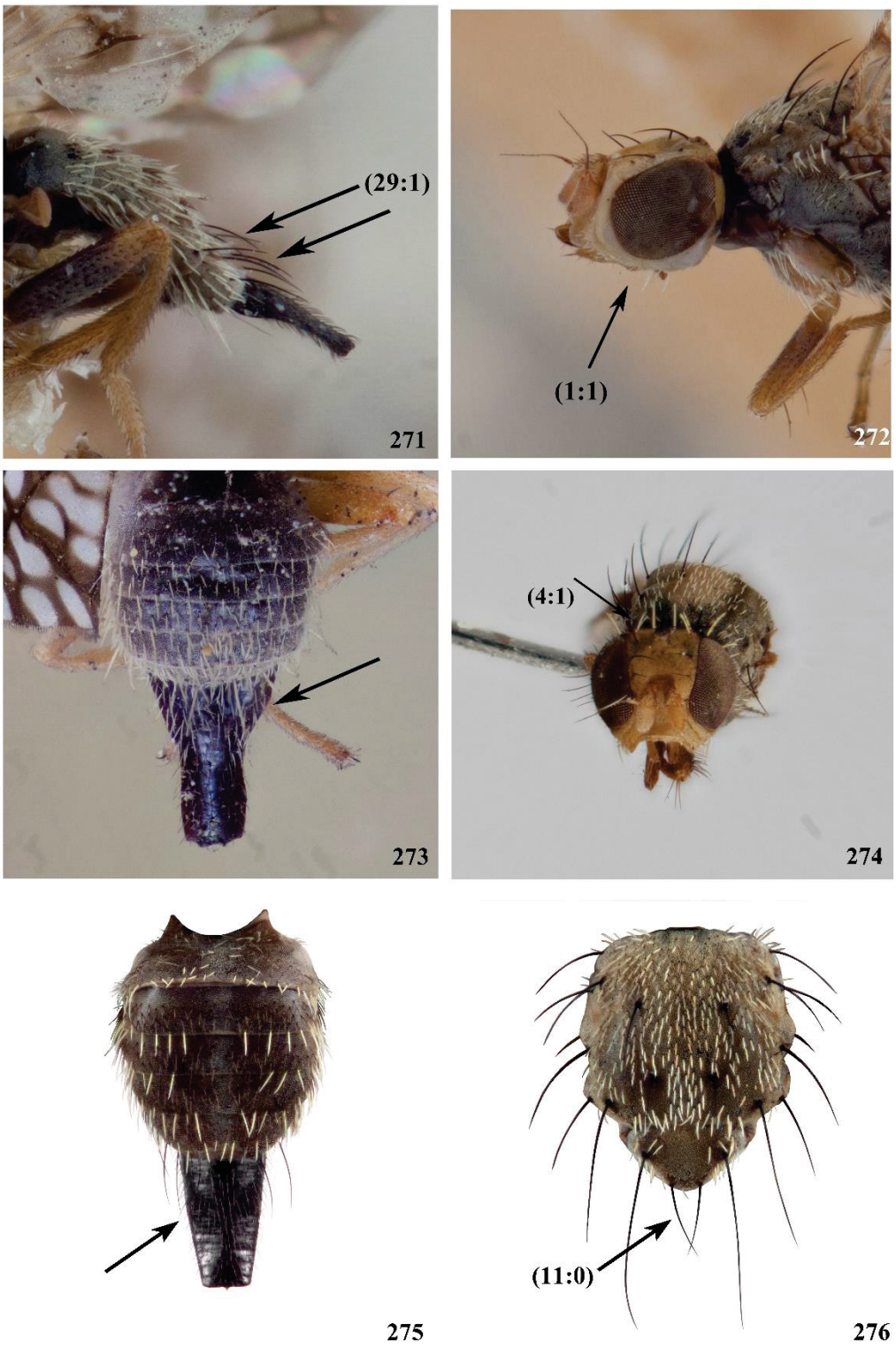
FIGURES 244–252. *Campiglossa hyalina* (Holotype): 244, lateral view; 245, dorsal view; 246, labels. *C. luculenta* (Holotype): 247, lateral view, 248, dorsal view; 249, labels. *C. taenipennis* (Holotype): 250, lateral view; 251, dorsal view; 252, labels. Photos by Silvana Lampert.

FIGURES 253–258. *Campiglossa trinotata* (Holotype): 253, lateral view; 254, dorsal view; 255, labels. Photos by Dr. Marcoandre Savaris. *C. venezolensis* (Holotype): 256, lateral view; 257, dorsal view; 258, labels. Photos by Dr. Peter Sehnal.

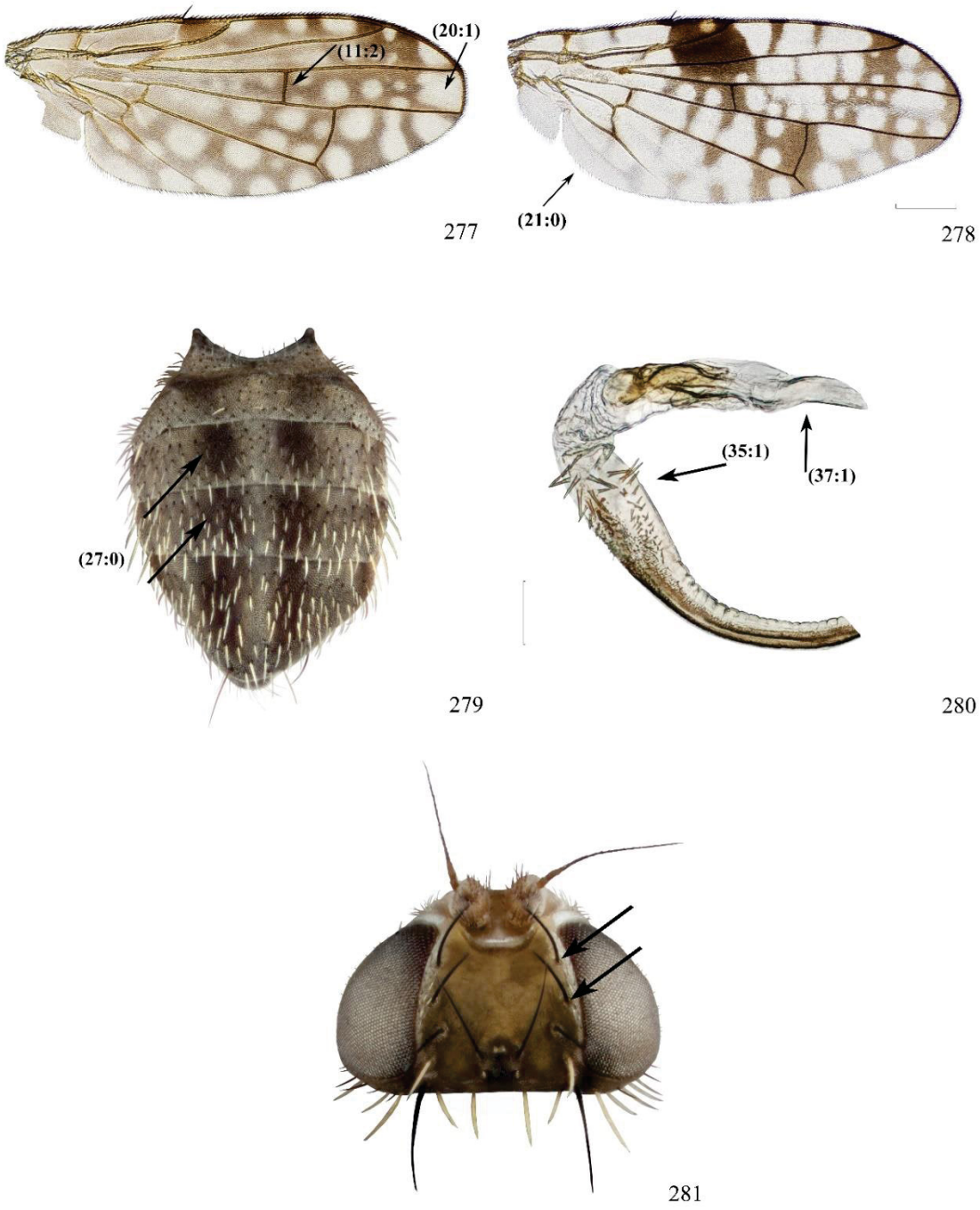


FIGURES 259–264. *Trupanea freyae* (Lectotype): 259, lateral view; 260, labels. *Dyseuaresta cassara* (Holotype): 261, lateral view, 262, labels. *Dioxyna crockeri* (Holotype): 263, dorsal view; 264, labels. Photos by Silvana Lampert.

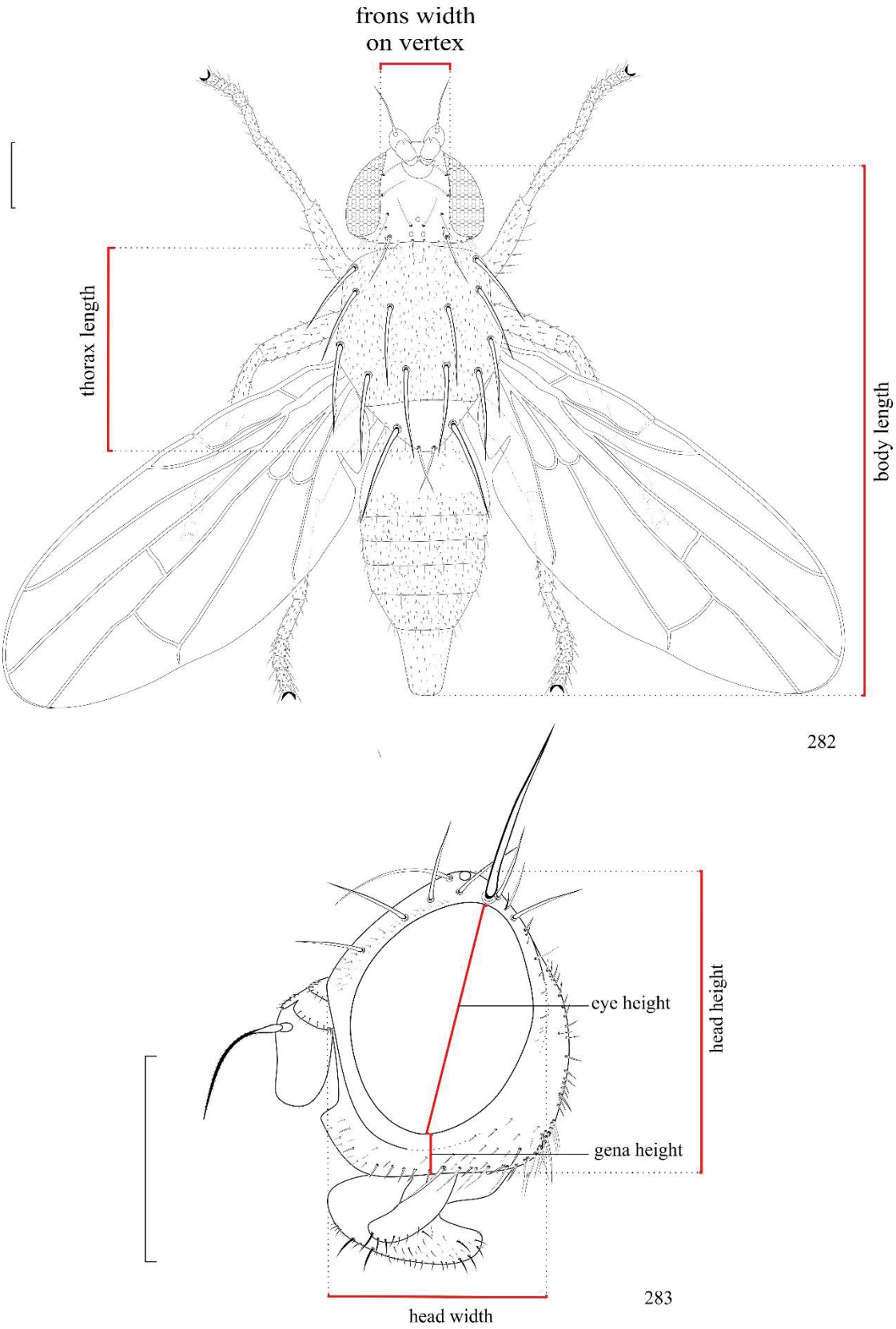
FIGURES 265–270. *Dioxyna enigma* (Holotype): 265, lateral view; 266, labels. *Dioxyna fibulata* (Paralectotype): 267, lateral view, 268, labels. *Dioxyna obsoleta* (Holotype): 269, lateral view; 270, labels. Photos by Silvana Lampert.



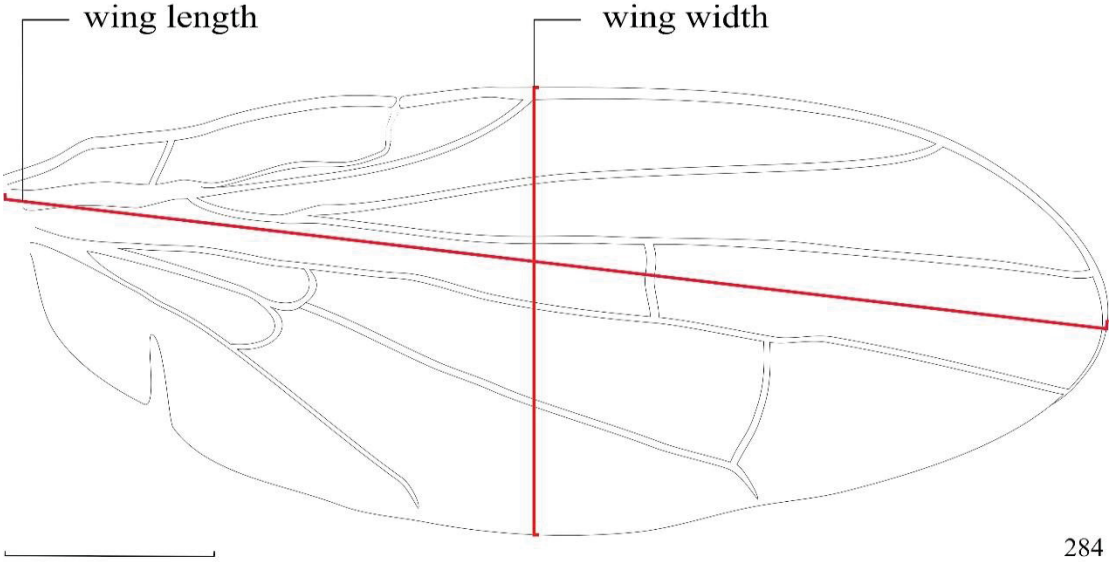
FIGURES 271–276. *Dioxyna crockeri* (Curran): 271, female with large acuminate setae in 4th tergite (29:1); 272, head, length greater than height (1:1). *Dyseuaresta cassara* (Walker): 273, oviscape with setulae white (lanceolate). *Campiglossa trinotata*: 274, posterior orbital seta inclinate (4:1). *Campliglossa taenipennis*: 275, oviscape dark brown, shiny; 276, scutellum, apical seta less than half as long as basal seta (11:0).

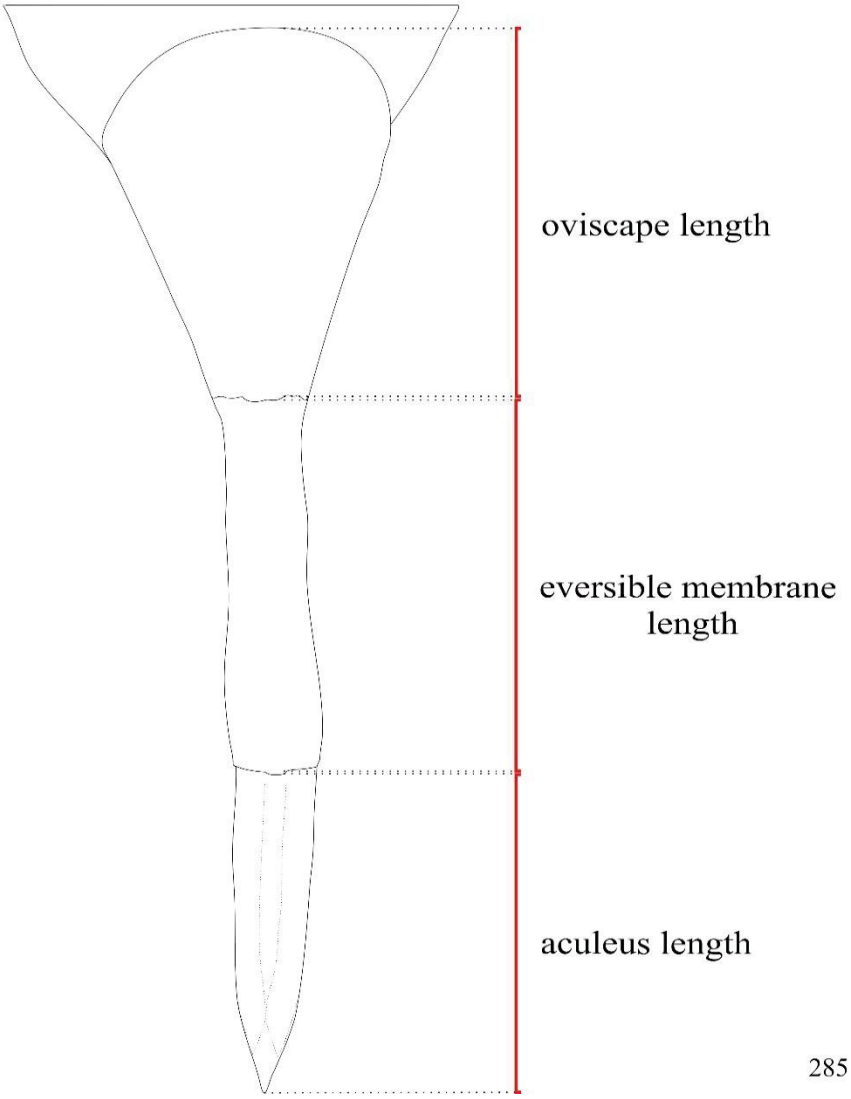


FIGURES 277–281. *Campiglossa freyae* Lindner: 277, crossvein r-m, absence of dark brown area bordering (11:2); cell r_{4+5}, absence of apical hyaline rounded spot (20:1). *Campiglossa* n. sp. 18: 278, wing, basal half of wing from cells bc and c to preapical part of cell br and preapical part of cell dm predominantly hyaline reticulate (21:0). *Campiglossa cosnpersa*: 279, each tergite with pair of submedial dark spots halfway between anterior and posterior margins (27:0). *Campiglossa* n. sp. 20: 280, distiphallus, spines of preglans, not on protuberance (35:1), glans with apical tube (37:1). *Campiglossa taenipennis*: 281, two pair of frontal setae, acuminate.



FIGURES 282–283. *Campiglossa taenipennis*: 282, body length, thorax length and frons width on vertex; 283, head height, head width, eye length, gena length. Scale bar = 0.5 mm.





FIGURES 284–285. Wing and female terminalia of *Campiglossa* n. sp. 8: 284, wing length, wing width; 285, oviscape length, eversible membrane length and aculeus length. Scale bar = 0.5 mm.

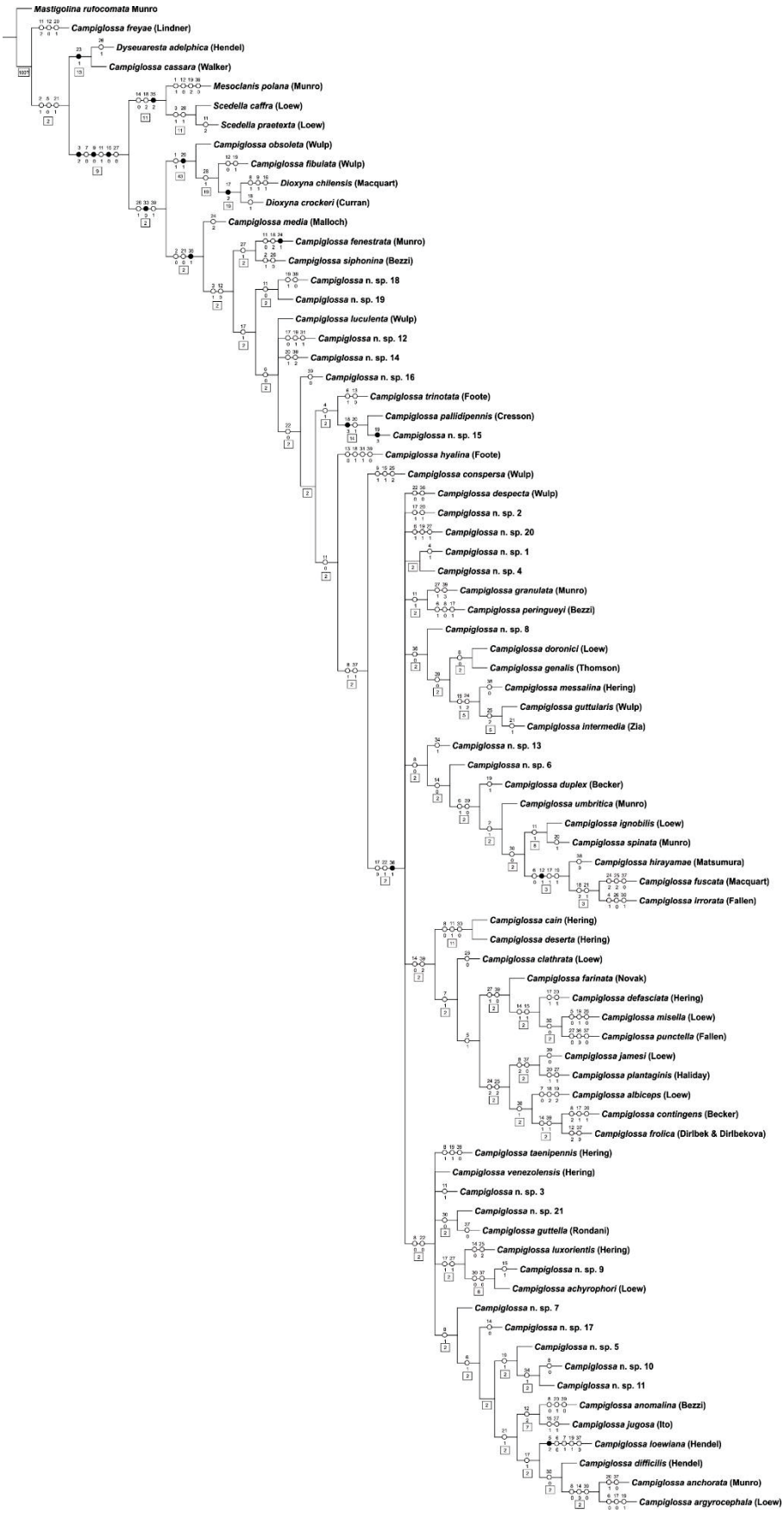


FIGURE 286. Strict consensus cladogram of hypothetical relationships among species of *Campiglossa*. Obtained from 10 equally parsimonious cladograms under implied weights (265 steps; CI=21; RI=57). Black circles indicate synapomorphic transformations and white circles indicate homoplastic transformations. The character number is shown above the circle and the corresponding character state is shown below it. Squares relative bremer values.

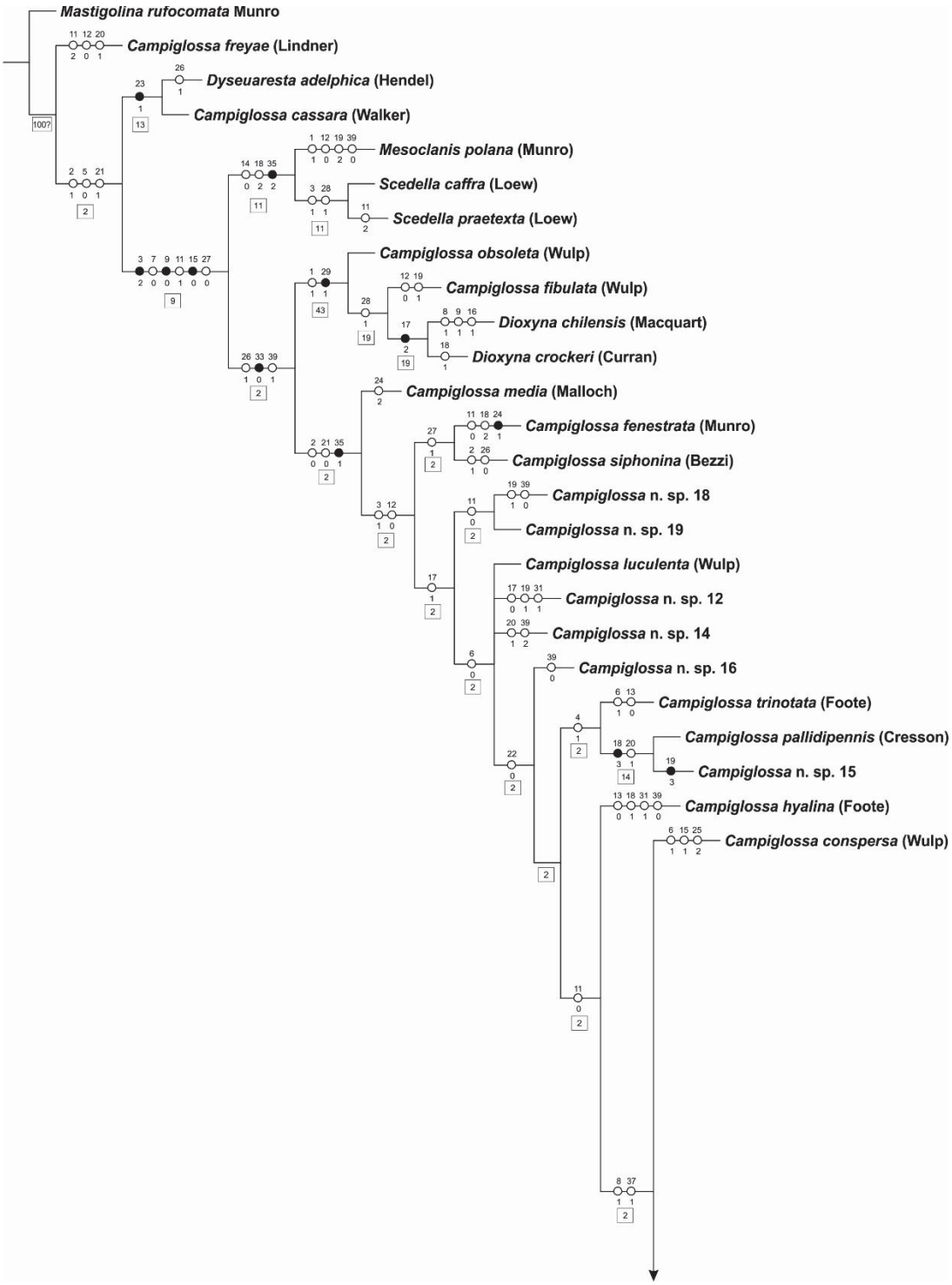


FIGURE 287. Strict consensus cladogram of hypothetical relationships among species of *Campiglossa*. Obtained from 10 equally parsimonious cladograms under implied weights (265 steps; CI=21; RI=57). Black circles indicate synapomorphic transformations and white circles indicate homoplastic transformations. The character number is shown above the circle and the corresponding character state is shown below it. Squares relative bremer values.

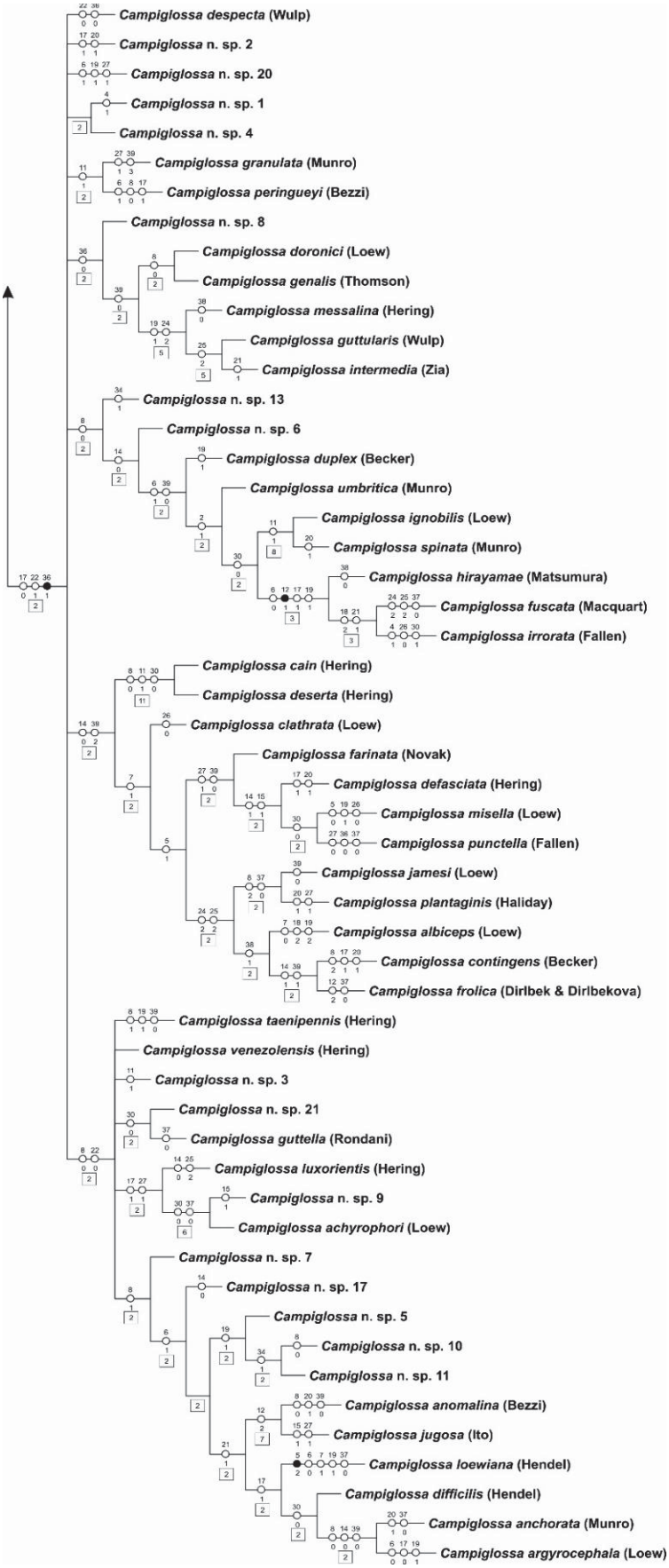


FIGURE 288. Strict consensus cladogram of hypothetical relationships among species of *Campiglossa*. Obtained from 10 equally parsimonious cladograms under implied weights (265 steps; CI=21; RI=57). Black circles indicate synapomorphic transformations and white circles indicate homoplastic transformations. The character number is shown above the circle and the corresponding character state is shown below it. Squares relative bremer values.