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SYSTEMATICS OF THE AMERICAN KATYDIDS (ORTHOPTERA: TETTIGONIIDAE). COMMUNICATION 8

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ABSTRACT

The genera *Rhammatopoda* Redtenbacher, 1892 (Mecopodinae), *Gnathoclitia* Hagenbach, 1841 (Plemiiniinae), *Theia* Brunner-Wattenwyl, 1891, *Viadana* Walker, 1869, *Tomeophera* Brunner-Wattenwyl, 1878, *Abrodiaeta* Brunner-Wattenwyl, 1878, *Aganacris* Walker, 1871, *Theudoria* Stål, 1874, *Ligocatinus* Rehn, 1901, gen. resurr. (it is restored from synonym to *Homotoicha* Brunner-Wattenwyl, 1891), *Ceraiaella* Hebard, 1933, *Enthephippion* Bruner, 1915, *Parableta* Brunner-Wattenwyl, 1878, *Chloroscirtus* Saussure et Pictet, 1897 and *Euthyrrachis* Brunner-Wattenwyl, 1878 (Phaneropterinae), as well as *Phlugiolo* Karny, 1907 (Meconematinae) are considered. The following new taxa are described from Peru, Ecuador, Brazil, Bolivia, Surinam, Paraguay and Colombia: *Rhammatopoda calabaza* sp. nov. from Peru; *Rh. oxapampa* sp. nov. from Peru; *Gnathoclitia (Gnathoclitia) izerskyi* sp. nov. from Peru; *Theia (Oxyprorella) hetairomima* sp. nov. from Peru; *Viadana (Paraviadana) ashaninka* sp. nov. from Peru; *V. (Viadana) rostrata* sp. nov. from Peru; *V. (V.) parobliqua* sp. nov. from Ecuador; *Tomeophera cellulata* sp. nov. from Peru; *T. parallela* sp. nov. from Peru; *Abrodiaeta (Abrodiaeta) macricula* sp. nov. from Peru; *A. (Sclerodiaeta) propinqua* subgen. et sp. nov. from Brazil; *A. (S.) fruhstorferi* sp. nov. from Brazil; *A. (Barodiaeta) minasgerais* subgen. et sp. nov. from Brazil; *Rostellula minutissima* gen. et sp. nov. from Peru; *R. santacruzii* sp. nov. from Bolivia; *Separatula adunca* gen. et sp. nov. from Peru and Ecuador; *Theudoria (Ctenophorema* stat. nov.) *pyrrhopteris surinam* subsp. nov. from Surinam; *Ligocatinus paraguay* sp. nov. from Paraguay; *Ceraiaella zebrina pudica* subsp. nov. from Peru; *Stylibleta* subgen. nov. and *Oscarbleta* subgen. nov. in *Parableta* s. l.; *P. (Parableta) cercata* sp. nov. from Ecuador; *P. (P.) nikolaii* sp. nov. from Peru; *P. (?P.) denticulata* sp. nov. from Bolivia; *Chloroscirtus columbianus* sp. nov. from Colombia; *Euthyrrachis consobrina elsol* subsp. nov. from Bolivia; *Phlugiolo paratushali* sp. nov. from Peru. One former genus is reduced to the subgenus *Homotoicha* Brunner-Wattenwyl, 1891, stat. nov. of the genus *Theudoria*. *Amaura olivacea* Brunner-Wattenwyl, 1891, *A. borelli* Giglio-Tos, 1897, *Ligocatinus sordidus* Rehn, 1921, *L. minutus* Rehn, 1921 and *Phanoptera quadrivittata* Piza, 1967, considered previously as belonging to three species of *Homotoicha*, as well as *Phanopterella infumata* Piza, 1977 are transferred to the genus *Enthephippion* with establishing the following synonymy: *Phanopterella* Piza, 1977, syn. nov. = *Enthephippion*; *E. olivaceum* comb. nov. = *Ph. quadrivittata*; *E. borelli* sp. resurr. et comb. nov. (it is restored from synonymy to *E. olivaceum*) = *L. sordidus* syn. nov.; *E. minutum* comb. nov. and *E. infumatum* comb. nov. are possible synonyms of each other. *Homotoicha amazoniensis* Cadena-Castañeda, 2015 is here included in the genus *Euthyrrachis* (as *E. amazoniensis* comb. nov.). Some other new data on the above-mentioned genera are also given.

Key words: America, Mecopodinae, Mecopodinae, new taxa, Phaneropterinae, Plemiiniinae, Tettigoniidae

СИСТЕМАТИКА АМЕРИКАНСКИХ КУЗНЕЧИКОВ (ORTHOPTERA: TETTIGONIIDAE). СООБЩЕНИЕ 8

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РЕЗЮМЕ

Рассмотрены роды *Rhammatopoda* Redtenbacher, 1892 (Mecopodinae), *Gnathoclitia* Hagenbach, 1841 (Plemiiniinae), *Theia* Brunner-Wattenwyl, 1891, *Viadana* Walker, 1869, *Tomeophera* Brunner-Wattenwyl, 1878,

Abrodiaeta Brunner-Wattenwyl, 1878, *Aganacris* Walker, 1871, *Theudoria* Stål, 1874, *Ligocatinus* Rehn, 1901, gen. resurg. (этот род восстановлен из синонимов *Homotoicha* Brunner-Wattenwyl, 1891), *Ceraiaella* Hebard, 1933, *Enthephippion* Bruner, 1915, *Parableta* Brunner-Wattenwyl, 1878, *Chloroscirtus* Saussure et Pictet, 1897 и *Euthyrrachis* Brunner-Wattenwyl, 1878 (Phaneropterinae), а также *Phlugiola* Karny, 1907 (Mecopodinae). Следующие новые таксоны описаны из Перу, Эквадора, Бразилии, Боливии, Суринама, Парагвая и Колумбии: *Rhammatopoda calabaza* sp. nov. из Перу; *Rh. oxarampa* sp. nov. из Перу; *Gnathoclita (Gnathoclita) izerskyi* sp. nov. из Перу; *Theia (Oxyprorella) hetairomima* sp. nov. из Перу; *Viadana (Paraviadana) ashaninka* sp. nov. из Перу; *V. (Viadana) rostrata* sp. nov. из Перу; *V. (V.) parobliqua* sp. nov. из Эквадора; *Tomeophera cellulata* sp. nov. из Перу; *T. parallela* sp. nov. из Перу; *Abrodiaeta (Abrodiaeta) macricula* sp. nov. из Перу; *A. (Sclerodiaeta) propinqua* subgen. et sp. nov. из Бразилии; *A. (S.) fruhstorferi* sp. nov. из Бразилии; *A. (Barodiaeta) minasgerais* subgen. et sp. nov. из Бразилии; *Rostellula minutissima* gen. et sp. nov. из Перу; *R. santacruzii* sp. nov. из Боливии; *Separatula adunca* gen. et sp. nov. из Перу и Эквадора; *Theudoria (Ctenophorema stat. nov.) pyrrhopterus surinam* subsp. nov. из Суринама; *Ligocatinus paraguay* sp. nov. из Парагвая; *Ceraiaella zebrina pudica* subsp. nov. из Перу; *Stylibleta* subgen. nov. и *Oscarbleta* subgen. nov. в составе *Parableta* s. l.; *P. (Parableta) cercata* sp. nov. из Эквадора; *P. (P.) nikolaii* sp. nov. из Перу; *P. (?P.) denticulata* sp. nov. из Боливии; *Chloroscirtus columbianus* sp. nov. из Колумбии; *Euthyrrachis consobrina elsol* subsp. nov. из Боливии; *Phlugiola paratushali* sp. nov. из Перу. Один бывший род понижен в ранге до подрода *Homotoicha* Brunner-Wattenwyl, 1891, stat. nov. рода *Theudoria*. *Amaura olivacea* Brunner-Wattenwyl, 1891, *A. borelli* Giglio-Tos, 1897, *Ligocatinus sordidus* Rehn, 1921, *L. minutus* Rehn, 1921 и *Phanoptera quadrivittata* Piza, 1967, рассматривавшиеся ранее как принадлежащие трем видам *Homotoicha*, а также *Phanopterella infumata* Piza, 1977 перенесены в род *Enthephippion* с установлением следующей синонимии: *Phanopterella* Piza, 1977, syn. nov. = *Enthephippion*; *E. olivaceum* comb. nov. = *Ph. quadrivittata*; *E. borelli* sp. resurg. et comb. nov. (этот вид восстановлен из синонимов *E. olivaceum*) = *L. sordidus* syn. nov.; *E. minutum* comb. nov. и *E. infumatum* comb. nov. являются возможными синонимами друг друга. *Homotoicha amazoniensis* Cadena-Castañeda, 2015 здесь включен в род *Euthyrrachis* (как *E. amazoniensis* comb. nov.). Приведены также некоторые другие новые сведения по вышеупомянутым родам.

Ключевые слова: Америка, Mecopodinae, Mecopodinae, новые таксоны, Phaneropterinae, Plemiinae, Tettigoniidae

INTRODUCTION

This paper is the eighth communication in the series of publications on the American Tettigoniidae (Gorochov 2012a, 2012b, 2014a, 2014b, 2015, 2016, 2017). It is devoted to some Neotropical genera which are still insufficiently studied [*Rhammatopoda* Redtenbacher, 1892 (Mecopodinae); *Gnathoclita* Hagenbach, 1841 (Plemiinae); *Aganacris* Walker, 1871, *Theudoria* Stål, 1874, *Ligocatinus* Rehn, 1901, gen. dist., *Ceraiaella* Hebard, 1933, *Enthephippion* Bruner, 1915, *Parableta* Brunner-Wattenwyl, 1878 and *Euthyrrachis* Brunner-Wattenwyl, 1878 (Phaneropterinae)] or were partially revised by the author [*Theia* Brunner-Wattenwyl, 1891, *Viadana* Walker, 1869 and *Tomeophera* Brunner-Wattenwyl, 1878 (Phaneropterinae)] (Gorochov 2015; Gorochov and Cadena-Castañeda 2015). The first two genera are probably represented in Peru by mountain inhabitants living at altitudes of 2000–2200 m above sea level; *Rhammatopoda* is a completely apterous genus retained developed tym-

pana on the fore tibia, but *Gnathoclita* wings are only insignificantly reduced and with a well-developed tegminal stridulatory apparatus in male. The genera *Theia* and *Viadana* are morphologically diverse and were divided into a few subgenera (Gorochov 2015; Gorochov and Cadena-Castañeda 2015), but some authors (Cadena-Castañeda 2014; Cigliano et al. 2018) consider *Theia* subgenera as genera and include them in a separate subtribe. *Abrodiaeta*, *Theudoria* and *Parableta* are just as diverse and divided here into subgenera. These insects are characteristic of more or less plain rainforests. The genera *Tomeophera*, *Aganacris*, *Ligocatinus*, *Ceraiaella*, *Enthephippion*, *Chloroscirtus* and *Euthyrrachis* are also distributed in such rainforests, but they are less diverse in their morphology and not divided into subgenera. Also this paper contains descriptions of some new genera and new data on the genus *Phlugiola* Karny, 1907 which supplement the previously published information on this genus (Gorochov 2012b; Cadena-Castañeda and Garcia 2014).

MATERIAL AND METHODS

The material studied (including type specimens) is deposited at the Zoological Institute, Russian Academy of Sciences, Saint Petersburg. All the specimens are dry and pinned. The photographs of their morphological structures were made with a Leica MZ16 stereomicroscope. Most part of this material was collected in mountain and plain rainforests at light. But some specimens were collected in these forests on leaves of trees and bushes during the night work with a flashlight. This work was carried out within the framework of a large project on the invertebrate fauna of the Ene and Tambo river basins under the supervision of the Peruvian and Ukrainian entomologist Volodymyr Izersky (Zoocriadero "Victoria SAC", Satipo). This project is founded by the National System of Natural State Protected Areas (Servicio Nacional de Áreas Naturales Protegidas) of Peru (Proyecto de Conservacion de la Biodiversidad de la Selva Amazonica: Identificacion taxonomica de la fauna invertebrada en la cuenca del Rio Ene y Rio Tambo). The online catalogue Orthoptera Species File (Cigliano et al. 2018) is cited in this paper as OSF.

SYSTEMATICS

Subfamily Mecopodinae Walker, 1871

Tribe Tabariini Braun, Chamorro-Rengifo et Morris, 2009

Rhammatopoda calabaza sp. nov.

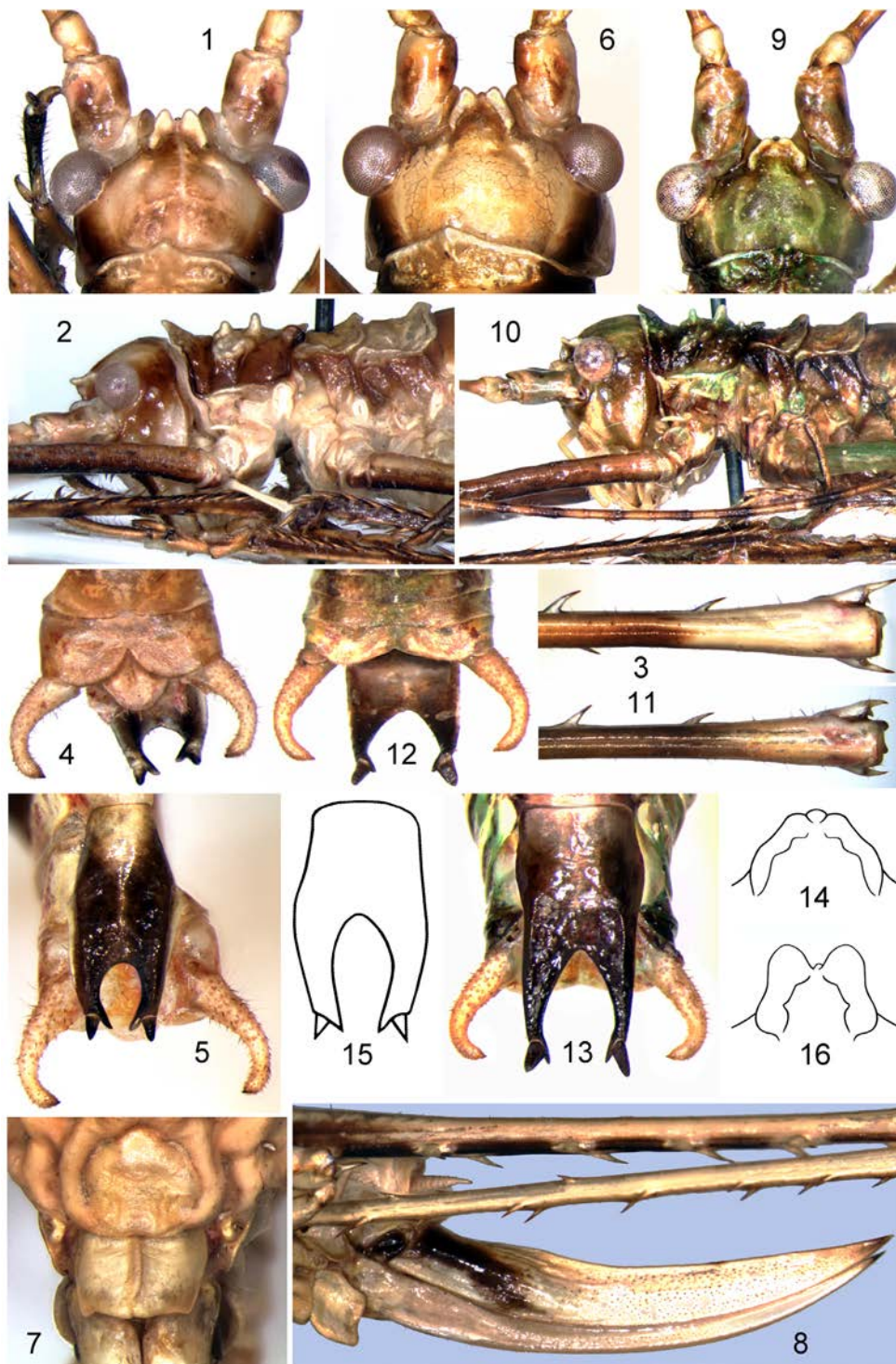
(Figs 1–8)

Etymology. This species is named after the Calabaza Village situated near its type locality.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., ~40 km NE of Satipo Town, environs of Calabaza Vill., 11.507832°S, 74.811745°W, 2000–2200 m, on leaf of low bush in disturbed forest near river, at night, 1–4 December 2017, A. Gorochov, G. Irisov. *Paratypes*: 3 females, same data as for holotype.

Description. *Male* (holotype). General appearance very similar to that of *Rh. opilionoides* Redtenbacher, 1892: body slender; head rather high but not wide, with eyes medium-sized and almost globular, ocelli absent, rostrum having only upper tubercle which somewhat dorsoventrally flattened and bifurcated in anterior part (Fig. 1), dorsum near rostrum

having a pair of irregular impressions, face between antennal cavities moderately narrow and having low vertical keel running to rostral tubercle and almost lamellar above these cavities (Figs 1, 2), border of each antennal cavity having rather large medial lobe, and scape simple but large (almost as wide as eye, and approximately 1.5 times as long as eye); pronotum small (rather short and low), with two more or less transverse grooves (deeper anterior groove and almost V-shaped posterior one) as well as with angular anteromedian tubercle and three pairs of rather short and almost finger-like dorsal tubercles behind anterior groove (surface between these tubercles non-smooth, and area between most posterior tubercles widest and having small posteromedian denticle; Fig. 2); meso- and metanotum 1.5–2 times as short as pronotum, with non-smooth dorsal surface, keel-like lateral edges, and almost conic posteromedian convexity; thoracic pleurites with spine-like tubercle located in ventral half of each episternum and with keel-like longitudinal convexities along dorsal edges of pterothoracic pleurites; each thoracic sternite with a pair of spine-like tubercles (prothoracic tubercles rather small); legs thin and very long (hind leg longer than all other legs but not adapted to jumps and with non-smooth surface of dorsal femoral half), with spinule-like ventral tubercle on each coxa, additional anterodorsal spinule on fore coxa, three outer and four inner slightly flattened spines on fore femur, four outer and two inner similar spines on middle femur, 11–12 outer and nine inner similar spines on hind femur, a pair of somewhat longer apical spines on each femur (Fig. 3), oval and moderately large both tympana of fore tibia, and rather numerous spinules on all tibiae (ventral spinules more numerous than dorsal ones, especially in distal part of tibiae; but in proximal half of hind tibia, dorsal spinules more numerous than ventral ones); all wings completely absent (Fig. 2); abdominal tergites simple, but last one with angular posteromedian notch; epiproct small, rounded; cerci rather thin and short, arcuately curved to each other, and with very short conical spinule at each apex (Fig. 4); genital plate elongate, but with deep and wide posteromedian notch, short conical styles, and small spinule-like processes near styles (between them) (Fig. 5); genitalia completely membranous. However, some characters of head, pronotum, legs and abdomen somewhat different than those of other congeners: rostrum of head slightly longer and with deeper anteromedian notch than in *Rh. oxapampa*



Figs 1–16. *Rhammatopoda* Redt.: 1–8 – *Rh. calabaza* sp. nov. (1–5, male; 6–8, female); 9–14 – *Rh. oxapampa* sp. nov. (male); 15, 16 – *Rh. opilionoides* Redt. (male). Head from above (1, 6, 9); head with thorax from side (2, 10); distal part of right hind femur from above (3, 11); abdominal apex from above (4, 12) and from below (5, 13); female genital plate from below (7); this plate and ovipositor from side (8); rostrum of head from above (14, 16); male genital plate from below (15). [15, 16 – after Redtenbacher (1892) and OSF, respectively (modified)].

sp. nov. (for comparison see Figs 1, 2 and 9, 10); pronotum with more smooth surface of most part of lateral lobes and with wider posterolateral pair of tubercles reaching posterior edge of pronotum (in *Rh. oxapampa* sp. nov., this part of pronotal lobes less smooth, and these tubercles thinner and not reaching posterior edge of pronotum; see Figs 2 and 10); apical femoral spines longer (more clearly protruding beyond femoral apex than in this species; see Figs 3 and 11); posteromedian notch of last tergite deeper than in this species (see Figs 4 and 12); posteromedian notch of genital plate significantly not reaching middle of this plate (in *Rh. opilionoides* and *Rh. oxapampa* sp. nov., it reaching this middle; see Figs 5, 13, 15). Body colouration also similar to that of *Rh. opilionoides*, yellowish (greenish in living condition) but with light brown, brown and whitish areas as well as blackish most part of genital plate (Figs 1–5).

Female. Structure of body similar to that of male, but anteromedian notch of head rostrum slightly smaller (Fig. 6), number of spines on legs insignificantly varied, abdomen larger (thicker in anterior two thirds), last tergite barely notched, epiproct almost triangular, and colouration lighter (Figs 6–8); genital plate and ovipositor as in Figs 7, 8.

Length (mm). Body: male 16.0, female 22.0–24.0; pronotum: male 2.8, female 3.5–3.8; fore femora: male 14.3, female 14.0–14.8; hind femora: male 25.0–26.0, female 27.0–28.0; hind tibiae: male 27.0–28.0, female 29.0–31.0; ovipositor 11.0–11.6.

Comparison. Differences from the two other species of this genus are given above, in the description of *Rh. calabaza* sp. nov. The new species is most similar to *Rh. opilionoides*, but it differs from the latter in the posteromedian notch of male genital plate distinctly less deep (for comparison see Figs 5 and 15). Possibly these congeners are only two subspecies of the same species, but *Ph. opilionoides* was described without indication of some important morphological characters and with insufficient data on its type locality (Redtenbacher 1892: “Peru”).

***Rhammatopoda oxapampa* sp. nov.**

(Figs 9–14)

Etymology. This species is named after the Oxapampa Town situated near its type locality.

Material studied. *Holotype* – male, PERU: Pasco Department, Oxapampa Prov., environs of Oxapampa Town, ~2200 m, on leaf of low bush in secondary

forest, at night, 3–4 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva.

Description. *Male* (holotype). Structure of body very similar to that of *Rh. opilionoides* and *Rh. calabaza* sp. nov. but with following differences: rostral tubercle of head somewhat shorter and with more clearly narrowed apex having distinctly smaller anteromedian notch (this notch even smaller than in female of *Rh. calabaza* sp. nov.; for comparison see Figs 1, 6, 9, 14, 16); pronotum with posterior pair of dorsal tubercles thinner than in *Rh. calabaza* sp. nov. and located not on posterior pronotal edge but near it (Fig. 10), as well as with most part of each lateral lobe non-smooth (in *Rh. calabaza* sp. nov., these lobes mostly smooth); femora with apical spines almost not protruding beyond femoral apex (Fig. 11); last abdominal tergite with rather shallow posteromedian notch (in *Rh. calabaza* sp. nov., this notch deeper; see Figs 4 and 12); cerci strongly hooked in distal half (more hooked than in *Rh. opilionoides*); genital plate more or less similar to that of *Rh. opilionoides* (i.e. its posteromedian notch reaching middle of this plate) but evidently somewhat longer and with narrowed distal halves of posterolateral lobes (see Figs 13 and 15). Colouration of body darker, i.e. with green, brown and light brown to yellowish areas, as well as with clearly spotted antennal flagellum and darkened area between dorsal tubercles of pronotal disc (Figs 9–13).

Female unknown.

Length (mm). Body 13.7; pronotum 2.5; fore femora 12.5; hind femora 22.0; hind tibiae 24.5.

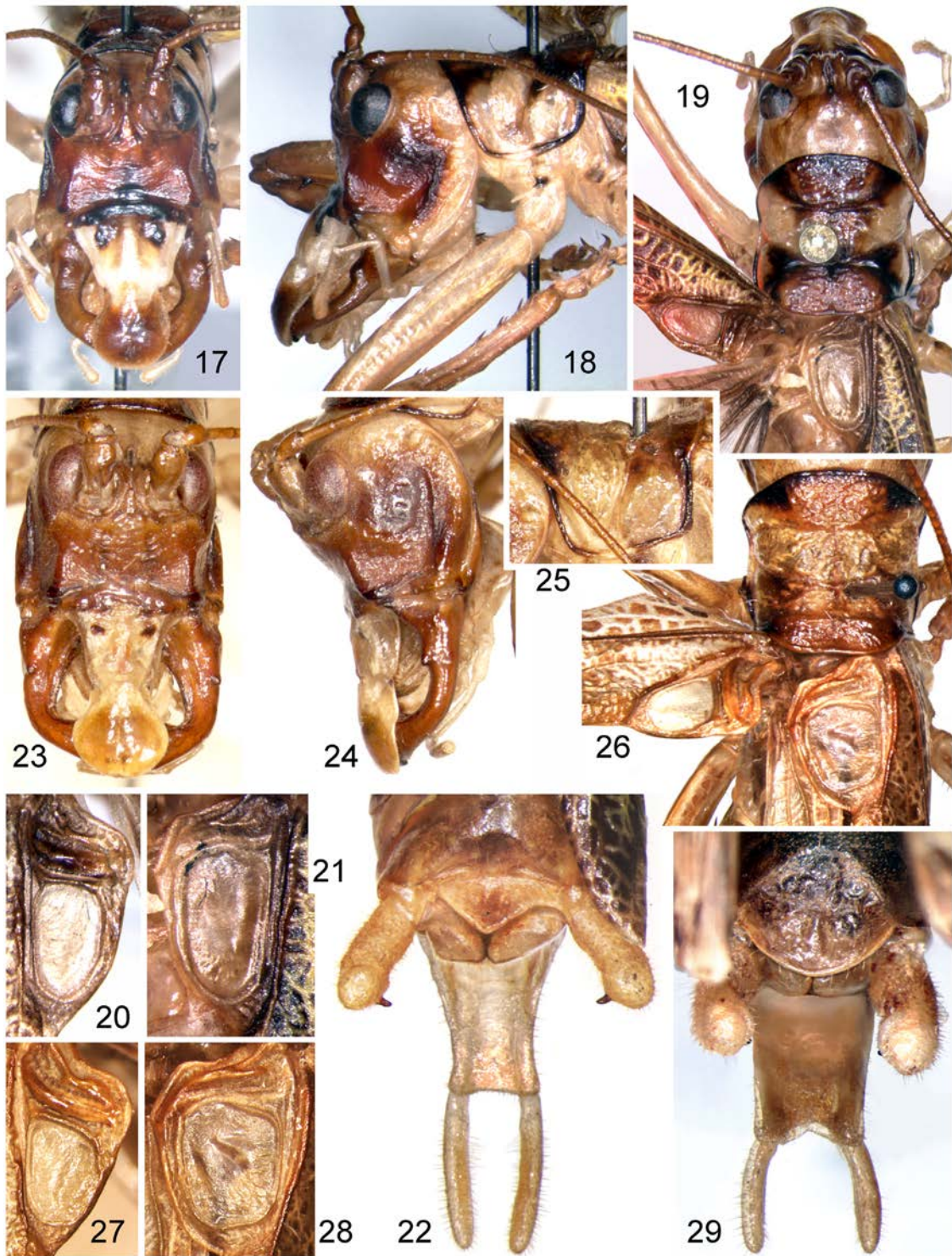
Comparison. The new species is distinguished from the other congeners by the characters listed above, in the description of *Rh. oxapampa* sp. nov. The most important features allow us to distinguish *Rh. oxapampa* sp. nov. from *Rh. opilionoides* are the shape of head rostral tubercle (see Figs 14 and 16), more strongly hooked distal halves of male cerci and more spotted body colouration (including antennal flagellum), and from *Rh. calabaza* sp. nov., the structure of rostral tubercle, pronotum and male genital plate (see Figs 5 and 13).

Subfamily Plemniinae Brunner-Wattenwyl, 1895

***Gnathoclita (Gnathoclita) izerskyi* sp. nov.**

(Figs 17–22, 30–34)

Etymology. This species is named after V. Izerksyy for his great help in organizing my work on the Peruvian Ensifera in 2017.



Figs 17–29. *Gnathochlita* Hagenbach, male: 17–22 – *G. izerskyi* sp. nov.; 23–29 – *G. peruviana* Carl. Head in front (17, 23); head with pronotum (18) and without it (24) from side; pronotum from side (25); head, pronotum and tegminal stridulatory apparatus from above (19); same but without head (26); stridulatory apparatus of left (20, 27) and right (21, 28) tegmina; abdominal apex from above (22, 29). [23–25, 27, 28 – after Gorochov (2014a)].

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., ~40 km NE of Satipo Town, environs of Calabaza Vill., 11.507832°S, 74.811745°W, 2000–2200 m, on leaf of low bush in disturbed forest near river, at night, 1–4 December 2017, A. Gorochov, G. Irisov. *Paratype* – female, same data as for holotype.

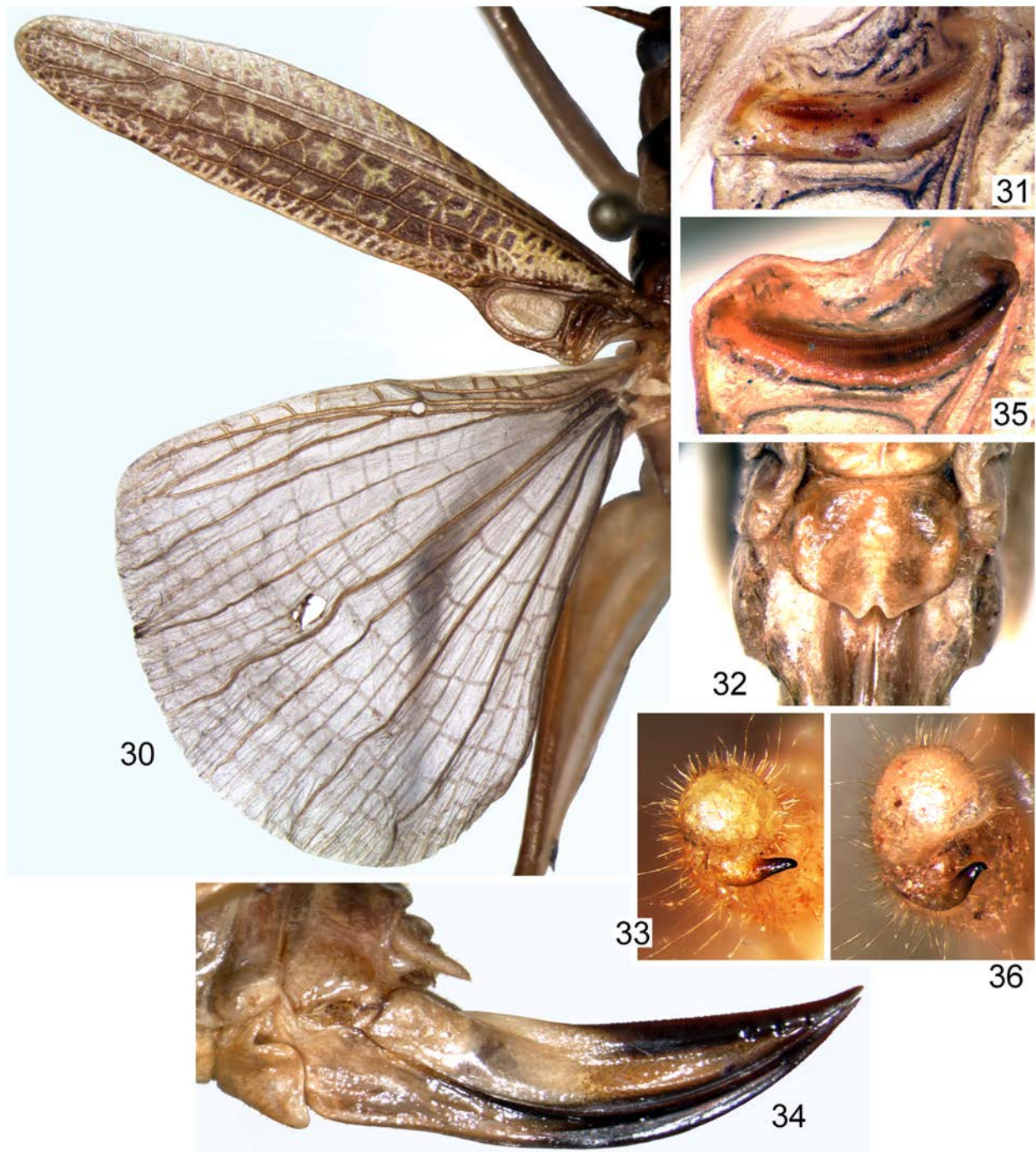
Description. *Male* (holotype). General appearance most similar to that of *G. (G.) peruviana* Carl, 1921. Head very high and not wide (its widest part located near bases of mandibles; Fig. 17); upper rostral tubercle short, angular in profile and narrow (laterally compressed but with dorsomedian very narrow and rather deep concavity); lower rostral tubercle much lower, pressed to previous tubercle anteriorly and with almost flat anterior surface and narrowly rounded dorsal apex; ocelli moderately small (lateral ocelli shortly oval, distinct; median one almost round, less distinct); eyes moderately small, almost semi-globular; space between antennal cavities narrow (scape approximately 3.5 times as wide as this space); borders of these cavities almost as in previous taxa (*Rhammatopoda* spp.); epicranium under eyes and antennal cavities rather high, with large concavity on each gena and vertical keel-like convexity under each eye; clypeus wide and very high, with short upper portion lacking tubercles or processes on its dorsal part (or on epicranium near this part) and with higher (longer) lower portion which gradually narrowing to clypeus; mandibles very long and arcuate, directed downwards/forwards, with proximal half having small rounded convexity near base (in *G. peruviana*, this convexity more conical and located closer to middle of mandible; for comparison see Figs 17, 18 and 23, 24), and with distal parts (having mandibular teeth at apex) less strongly curved to each other than in *G. peruviana*. Pronotum almost indistinguishable from that of this species (see Figs 18, 19 and 25, 26); tegmina reaching abdominal apex but distinctly narrower than in *G. peruviana* (in latter species, tegmina slightly protruding beyond abdominal apex) and with distinctly shorter stridulatory vein and clearly narrower mirrors (see Figs 19–21, 26–28, 30, 31, 35); hind wings (Fig. 30) clearly not reaching abdominal apex (barely protruding beyond it in *G. peruviana*); legs (including inner and outer tympana) almost indistinguishable from those of latter congener. Abdominal apex also similar to that of *G. peruviana*, but epiproct with roundly angular (not simply rounded) posterior part (see Figs 22 and 29), each cercus with ventral hook less arcuate in posterior view and al-

most without concavity above this hook (see Figs 33 and 36); genital plate with narrower and less notched apical part as well as with longer styles (see Figs 22 and 29); genitalia completely membranous. Body colouration distinguished from that of *G. peruviana* by larger darkened parts of clypeus and pronotal disc as well as darker most part of tegminal membranes (see Figs 17–19 and 23–26).

Female. Head with epicranium more or less similar to that of male but slightly narrower in lower part, with mouthparts distinctly shorter (less high) and almost unspecialized: clypeus clearly lower; mandibles almost not arcuate, directed downwards and without distinct convexities or tubercles. Pronotum, wings and legs more similar to those of male, but tegmina without stridulatory apparatus and insignificantly less narrow in middle part; abdominal apex with epiproct rounded almost as in male of *G. peruviana* but smaller, with cerci thinner and unspecialized, and with genital plate and ovipositor as in Figs 32, 34. Body colouration also similar to that of male, but tegminal membranes almost blackish.

Length (mm). Body: male 25.0, female 27.5; pronotum: male 4.5, female 5.2; tegmina: male 15.5, female 19.5; hind femora: male 14.3, female 16.7; ovipositor 12.5.

Comparison. The new species differs from the closely related *G. peruviana* in the shorter stridulatory vein and narrower mirrors in the male tegmina as well as some small characters of male mandibles, male abdominal apex and body colouration (see above). From all the other congeners, the new species is distinguished by: the tegmina more spotted, shorter and having narrower mirrors [from *G. laevifrons* Beier, 1960]; the head narrower, and tegmina longer [from *G. sodalis* Brunner-Wattenwyl, 1895]; by the antero-proximal mandibular tubercle distinctly smaller, and tegmina clearly shorter [from *G. vorax* (Stoll, 1813)]; by the absence of tubercles or spines near the dorsal clypeal edge, and tegmina distinctly longer (from the subgenus *Disceratus* Scudder, 1869). It is necessary to note that in the electronic catalogue (OSF), this subgenus was again restored as a separated genus; it is a mistake, because some species of the subgenus *Disceratus* have intermediate characters between type species of this subgenus and representatives of *Gnathochlita* s. str. Moreover, the too fragmented and confused classification proposed by Beyer (1960, 1963) seriously complicates the generic determination in this complex subfamily.



Figs 30–36. *Gnathoclitita* Hagenbach: 30–34 – *G. izerskyi* sp. nov.; 35, 36 – *G. peruwiana* Carl. Male left wings (30); stridulatory vein of left tegmen from below (31, 35); female genital plate from below (32); apex of male left cercus from behind (33, 36); ovipositor with genital plate from side (34).

Subfamily Phaneropterinae Burmeister, 1838

Tribe Phaneropterini Burmeister, 1838

Subtribe Pycnopalpina Cadena-Castañeda, 2014

Note. In one of my previous communications (Gorochov 2016), this subtribe was included in the tribe Dysoniini Rehn, 1950 but with an indication that this position is very problematic: “Pycnopalpina may be as a member of the tribe Phaneropterini ... as a member of Dysoniini” (Gorochov 2016: 136). Here I am more inclined to the opinion about its belonging to Phaneropterini.

Theia (Oxyprorella) hetairomima sp. nov. (Figs 37–47)

Etymology. The new species is named after the genus *Hetaira* Brunner-Wattenwyl, 1891, because its pronotal disc is rather similar to that of *Hetaira* in the colouration.

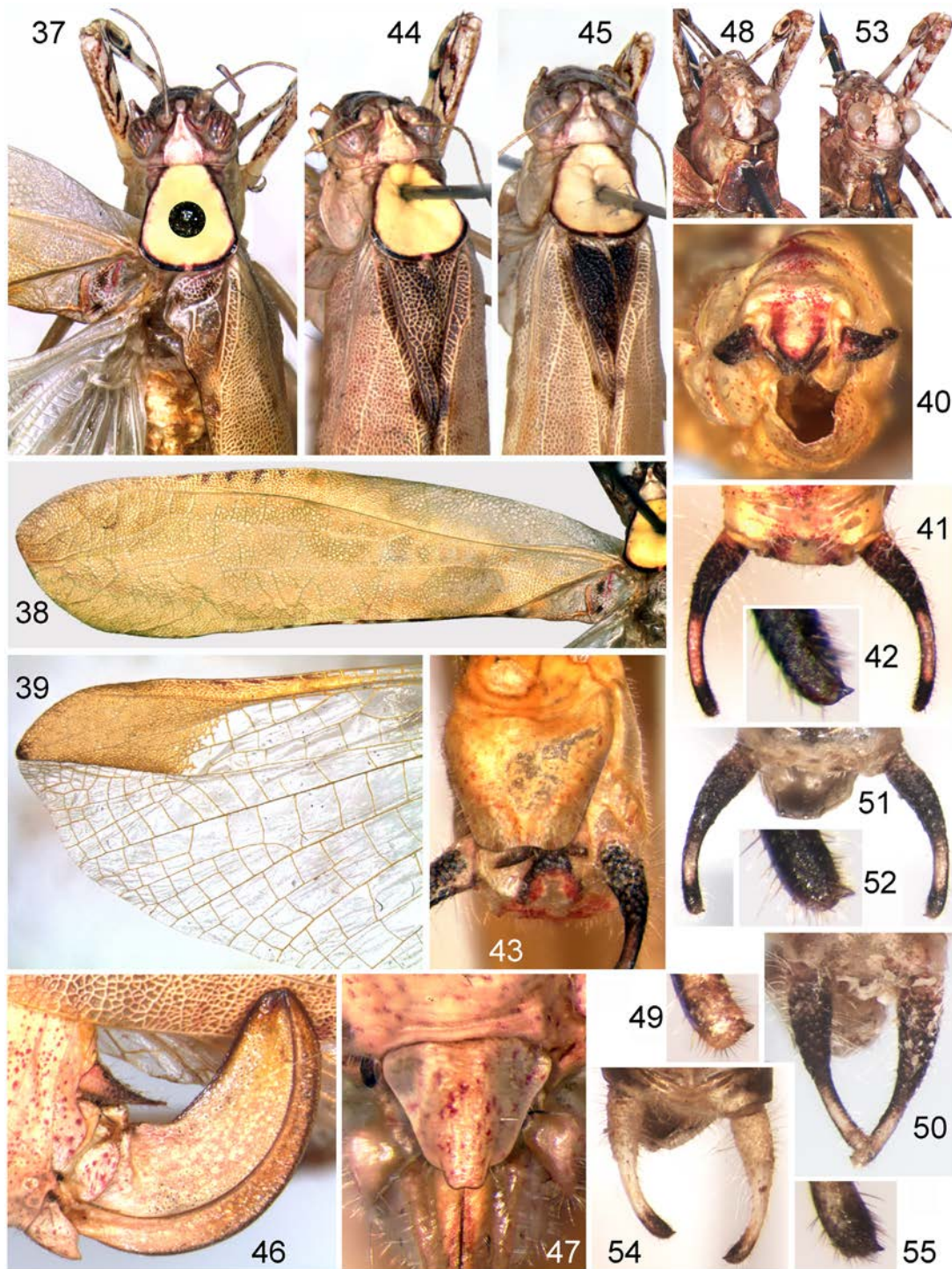
Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov. *Paratypes*: 1 male, 2 females, same data as for holotype.

Description. *Male* (holotype). Body colouration more or less uniformly yellowish (greenish in living condition), but: epicranium with almost whitish median ocellus and upper rostral tubercle as well as large area extending from this tubercle to posterior edge of epicranial dorsum (Fig. 37); eyes with several reddish vertical lines; rest of epicranium with area under median ocellus and antennal cavities (as well as under medial parts of eyes) having numerous brown dots and a few light brown areas between these dots; antennal flagellum with very sparse and small dark brown spots; mouthparts with reddish tinge, small brown spots on upper part of clypeus and at apices of all palpi, and light brown apical part of labrum; pronotum with yellow (yellowish green in living condition) disc having dark brown borders along lateral and posterior edges (Fig. 37), and with somewhat wider (than these borders) light brown stripe on each lateral lobe along its dorsal edge; tegmina uniformly yellowish with greenish tinge, a few brownish marks along middle part of costal edge and along most part of anal edge, 2–3 small brown-

ish spots on each dorsal field, and almost transparent areas in these fields and in proximal half of costal area (Figs 37, 38); hind wings transparent with yellowish distal area having a few small brownish marks along costal edge and greyish brown small apical spot (Fig. 39); legs with characteristic brown to light brown oblique stripes on both sides of fore femur (Fig. 37), dark brown area around outer tympanum, narrower and interrupted brown ring around inner tympanum, a few light brown marks on rest of fore tibia and on middle tibia, brown distomedial/distodorsal area on hind tibia, and small brown marks on all tarsi; rest of body with very sparse reddish dots on pleurites, abdominal tergites and sternites, and genital plate, with reddish transverse stripes on abdominal dorsum and longitudinal ones on epiproct, with dark brown apical part of epiproct and nearest parts of paraprocts as well as most part of each cercus (cercus also with light brown proximodorsal spot and longitudinal dorsal area; Figs 40–43). Structure of body most similar to that of *Th. (O.) amazonica levis* Gorochov, 2015, but head dorsum with small but distinct additional tubercle near base of upper rostral tubercle [as in *Th. (O.) andina ecuadori* Gorochov, 2015 and *Th. (O.) misera* (Brunner-Wattenwyl, 1878); Fig. 37], tegmina with less oblique distal part (Fig. 38) and with stridulatory apparatus as in Fig. 37, and pronotum with almost rounded (convex) but not slightly bilobed posterior part of disc (Fig. 37); however, epiproct, genital plate and cerci almost indistinguishable from those of all known species of subgenus *Oxyprorella* Giglio-Tos, 1898 (see Figs 41, 42, 49–52, 54, 55); genitalia completely membranous.

Variation. Second male with only somewhat darker (brown) inner spots of middle tibiae, a few additional small brown marks on lateral tegminal field between costal and anal rows of spots, and with barely narrower epiproct.

Female. General appearance as in male, but tegminal stridulatory apparatus absent, dorsal tegminal field almost completely dark brown (Fig. 45) or with yellowish to light brown venation and brown spaces between them (Fig. 44), distal area of hind wing sometimes with more numerous and darker small spots, hind femur sometimes with sparse reddish dots, pleurites and abdomen sometimes almost uniformly light (epiproct and paraprocts light in all females); cerci also similar to those of males but smaller and with thinner distal parts; genital plate and ovipositor as in Figs 46, 47.



Figs 37–55. *Theia* Br.-W.: 37–47 – *Th. (Oxyprorella) hetairomima* sp. nov.; 48–50 – *Th. (O.) amazonica levis* Gor.; 51, 52 – *Th. (O.) andina ecuadori* Gor.; 53–55 – *Th. (O.) misera* (Br.-W.). Anterior part of body with bases of wings (37, 44, 45) and without them (48, 53) from above, male (37, 48, 53) and female (44, 45); male left tegmen (38); distal half of male hind wing (39); male abdominal apex from behind (40), from above (41, 50, 51, 54), and from below but partly without cerci (43); apical part of left cercus from above (42, 49, 52, 55); ovipositor from side (46); female genital plate from below (47). [49–52, 54, 55 – after Gorochov (2015), modified].

Length (mm). Body: male 12.5–15.0, female 14.0–15.5; body with wings: male 25.0–26.0; female 26.0–26.5; pronotum: male 2.3–2.5, female 2.3–2.6; tegmina: male 18.0–18.8, female 19.0–19.5; ovipositor 4.4–4.6.

Comparison. The new species differs from all the other congeners in the characteristic yellowish green colouration of pronotal disc similar to that of the genus *Hetaira*. Additionally it is distinguished from the most similar *Th. (O.) amazonica* (Cadena-Castañeda, 2014) by the tegmina with less oblique distal parts and with greenish (not brownish) colouration; from *Th. (O.) andina* (Cadena-Castañeda, 2014), by all the wings somewhat shorter, pronotal disc not bilobed (*vs.* clearly bilobed posteriorly), and fore femora having distinct oblique brown stripes (*vs.* these stripes are less distinct and almost not oblique); and from *Th. (O.) misera* having oblique stripes on the fore femora somewhat similar to those of both the new species and *Th. (O.) amazonica* (see Figs 37, 44, 45, 48, 53), by the wings distinctly longer, proximal halves of hind femora narrower, pronotal disc not bilobed posteriorly, and body colouration greenish (not brownish grey). It is necessary to note that in OSF, the subgenus *Oxyprorella* is erroneously divided into two genera [*Oxyprorella* and *Theiella* Cadena-Castañeda, 2014 included by Gorochov (2015) in one genus and most likely belonging to the same subgenus]; its representatives have some differences in the habitus, but such common features as the same shape of copulatory structures (especially cerci) in the male abdominal apex, presence of small posteromedian appendices on the abdominal tergites, whitish rostrum and dorsum of head, as well as some other characters presented in some species from the both “genera” (the presence of one small additional median tubercle near the base of upper rostral tubercle, more or less bilobed posterior part of pronotal disc, whitish anteromedian and posteromedian marks on this disc, brown oblique stripes on the fore femora, characteristically darkened male cerci) do not allow me to divide *Oxyprorella* even into two subgenera.

Subtribe Viadanina Cadena-Castañeda, 2012

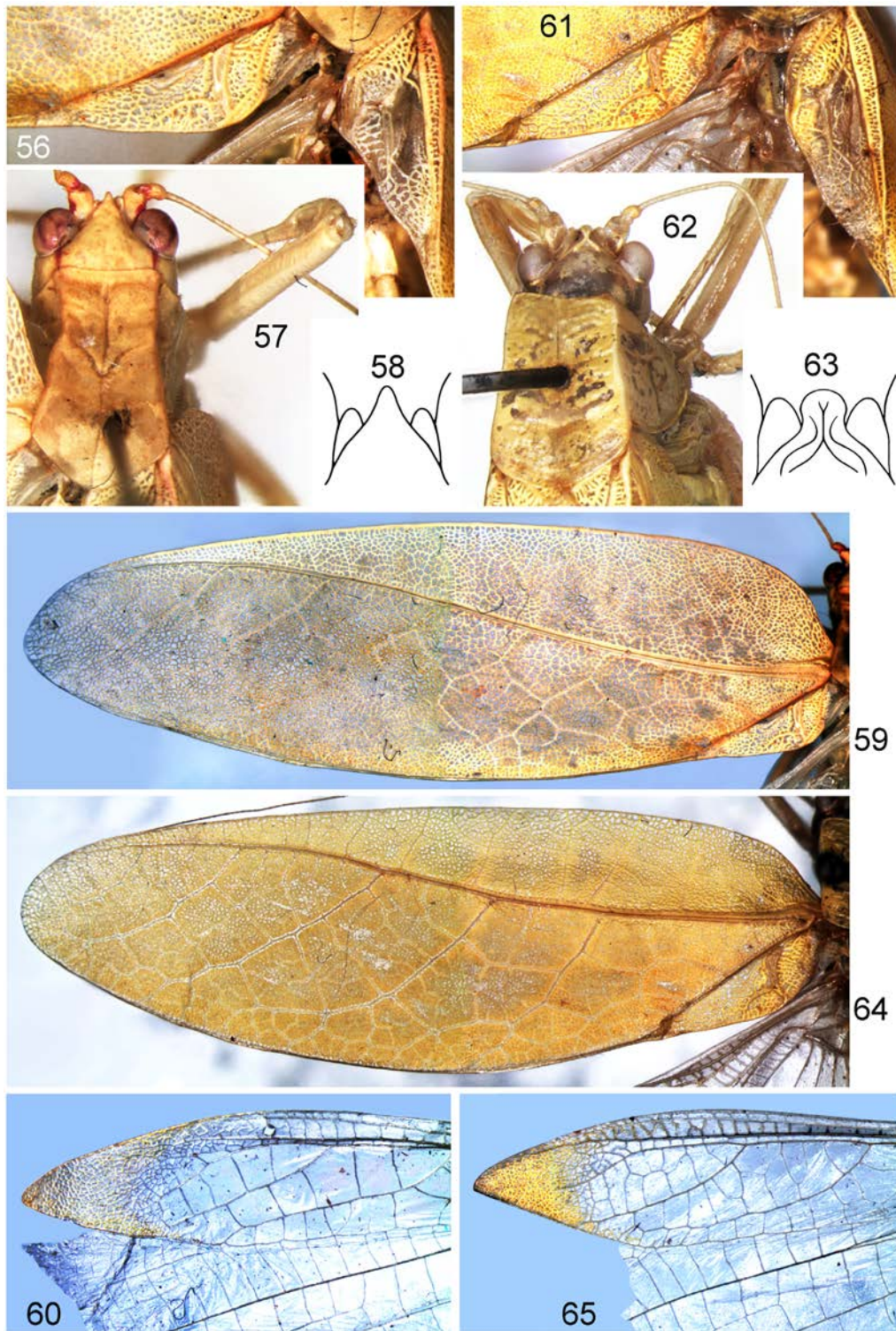
Viadana (Paraviadana) ashaninka sp. nov.
(Figs 56–60, 66–71)

Etymology. The new species is named after “Reserva Comunal Ashaninka” where it was collected.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N of Pichigua Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov. *Paratypes*: 14 male, 2 females, same data as for holotype.

Description. *Male* (holotype). Colouration yellowish with brownish and greenish tinges (light greenish in living condition), but eyes light brown in dorsal two thirds and with reddish brown longitudinal stripes on dorsal halves, dorsum of head with a pair of reddish longitudinal stripes behind eyes, wings with transparent most part of hind wings (but distal part of these wings partly yellowish) and some membranes in tegminal stridulatory apparatus (Figs 56, 57, 59, 60), and cerci with distal parts of their apical branchlets darkened (brown to dark brown; Figs 66–68). Head with very narrow (almost lamellar) distal part of upper rostral tubercle (Fig. 58); pronotum with almost straight anterior edge of disc, with roundly angular posterior edge of disc and almost rounded (in transversal section) borders between disc and lateral lobes (Fig. 57); tegmina long and rather wide, with majority of Sc branches more or less perpendicular to majority of oblique branches located between radial area and anal tegminal edge (Fig. 59), and with stridulatory apparatus as in Fig. 56; legs typical of this subgenus; last abdominal tergite with moderately large and rounded posteromedian notch; epiproct more or less triangular but elongate, with slight longitudinal (median) groove on dorsum, and with apical part almost spine-like; paraprocts small, roundly triangular but with almost angular apex; cerci rather long, thin, curved medially in distal third, gradually narrowing to bifurcate apex (both apical branchlets small, but outer one rather short and acute, and inner one clearly longer and distinctly S-shaped as well as almost not acute; Figs 66, 67); genital plate moderately elongate, somewhat narrowing to apex, with rather deep and almost angular posteromedian notch and with a pair of rather long and angular lobules around this notch (Fig. 68); genitalia membranous but with characteristic semi-membranous and almost round plate-like structure having dorsal surface distinctly concave (Fig. 71).

Variation. Some males with eyes uniformly light brown or greyish, with antennal scape and pedicel having reddish marks, and with apical parts of lobules of genital plate darkened.



Figs 56–65. *Viadana* Walk., male: 56–60 – *V. (Paraviadana) ashaninka* sp. nov.; 61–65 – *V. (Viadana) rostrata* sp. nov. Tegminal stridulatory apparatus from above (56, 61); head with pronotum and fore leg from above (57, 62); rostrum of head from above (58, 63); left tegmen (59, 64); distal half of costal part of hind wing (60, 65).

Female. Colouration and external structure of body as in males, but head sometimes almost without reddish marks, tegminal stridulatory apparatus absent, last tergite with less notched posterior part, and cerci smaller and unspecialized; genital plate as in Fig. 70; ovipositor gonangulum with rather large ventral concavity and small (almost tubercle-like) distal convexity almost under this concavity (Figs 69, 70); ovipositor as in Fig. 69.

Length (mm). Body: male 15.5–17.0, female 17.5–18.5; body with wings: male 32.0–35.0, female 35.0–37.0; pronotum: male 4.0–4.2, female 4.3–4.7; tegmina: male 25.5–27.5, female 27.0–28.5; hind femora: male 13.0–14.0, female 13.5–14.5; ovipositor 10.0–10.5.

Comparison. The new species is very similar to *V. (P.) inversa* (Brunner-Wattenwyl, 1878) and may be its subspecies only, but Brunner-Wattenwyl (1878) indicated *V. inversa* type locality as “Peru”, and it is difficult to give any suitable subspecies classification at the present. From the latter species, *V. ashaninka* sp. nov. differs in the male cerci with more asymmetrical apical branchlets (in *V. inversa*, the inner apical branchlet is more acute and less S-shaped, and outer one is slightly longer than in the new species) and in the male genital plate with a clearly deeper posteromedian notch. From all the other species of the subgenus *Paraviadana* Piza, 1980 having each male cercus bifurcate, the new species is distinguished by this cercus (from *V. styliformis* Brunner-Wattenwyl, 1891 and *V. intermedia* Gorochov, 2015) or one of its branchlets (from *V. cercata* Gorochov, 2015 and *V. napo* Gorochov, 2015) clearly shorter, or the outer branchlet of this cercus shorter than inner one (from *V. altera* Brunner-Wattenwyl, 1891). From *V. (P.) septentrionalis* (Piza, 1980), the new species differs in a deeper and almost angular (not almost transversally rectangular) posteromedian notch of the male genital plate; and from *V. (P.) cercata cuyabeno* Gorochov, 2015, *V. (P.) intermedia atalaya* Gorochov, 2015 and *V. (P.) aenigma* Gorochov, 2015 with unknown males, in the ventral concavity of ovipositor gonangulum larger and having small distal tubercle-like convexity almost under this concavity [from *V. c. cuyabeno* which has this concavity smaller (located in ventroproximal part of gonangulum) and distal convexity larger (not separated from more dorsal part of gonangulum by any concavity)], as well as in the distinctly more transverse female genital plate (from *V. i. atalaya* and *V. aenigma*).

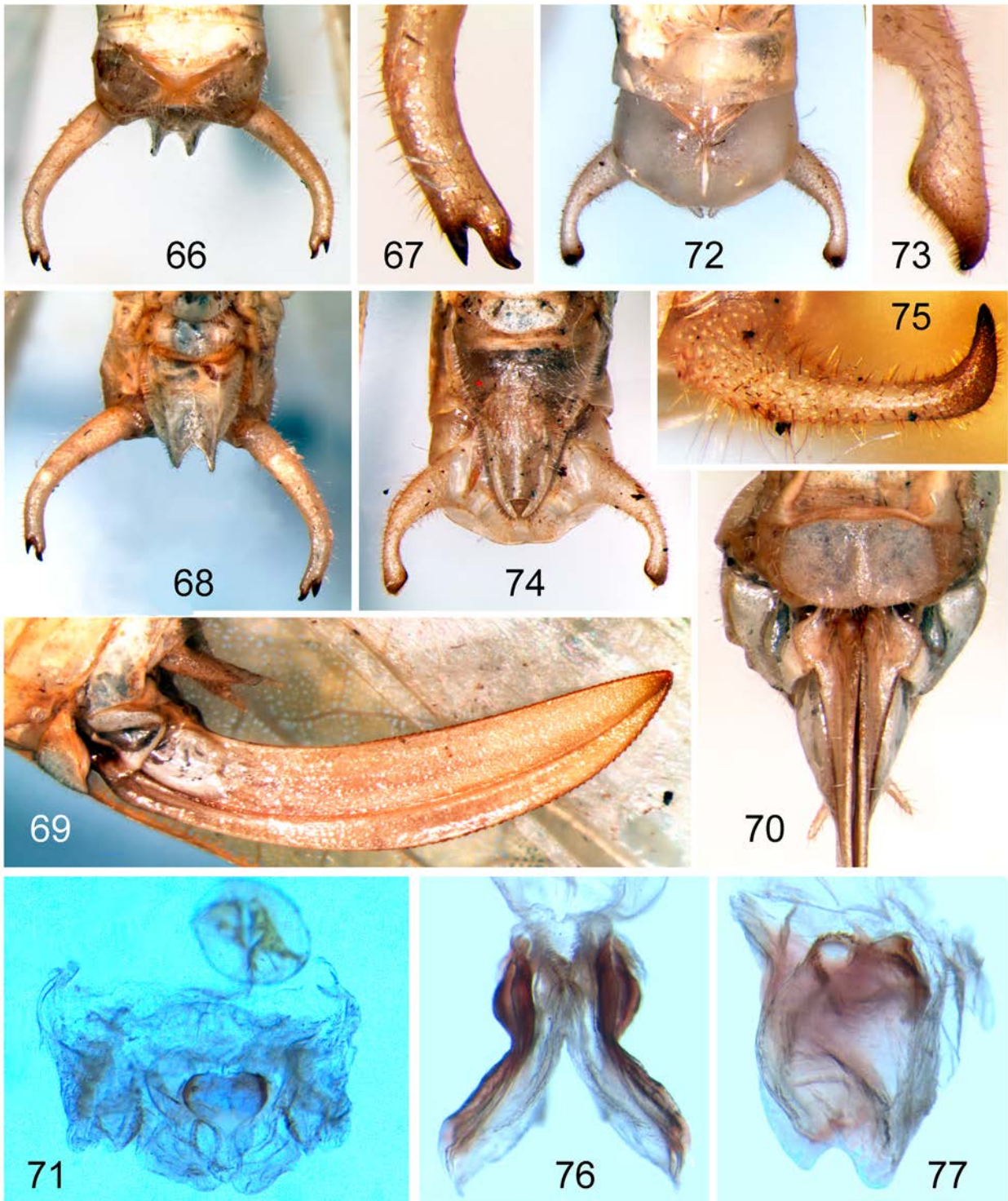
***Viadana (Viadana) rostrata* sp. nov.**
(Figs 61–65, 72–77)

Etymology. This species name originates from “rostrum”, a morphological term from Latin word meaning beak or nose.

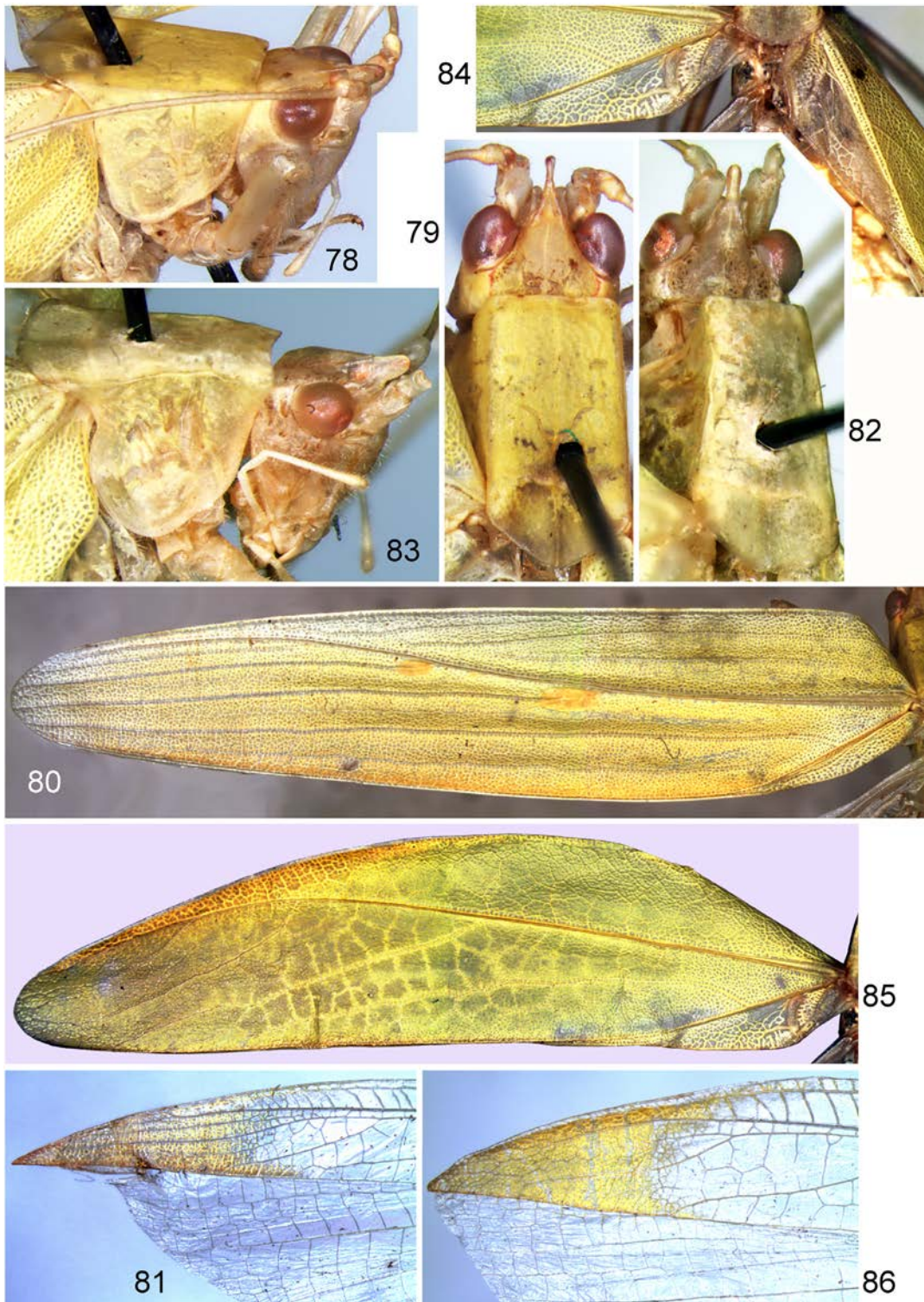
Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov.

Description. *Male* (holotype). Body colouration yellowish with greenish tinge (light greenish in living condition), but eyes yellowish rose, wings with transparent parts as in *V. (P.) ashaninka* sp. nov., cerci with slightly darkened (light brown) small distomedial area (Figs 61, 62, 64, 65, 72–75). Rostrum of head with upper tubercle slightly widened in apical part, narrowed in subapical part and having longitudinal dorsomedian groove running from low lateral keels at base of above-mentioned tubercle to almost apical part of this tubercle (Fig. 63); pronotum with shallowly notched anterior edge of disc, with rounded posterior edge of disc and with almost keel-like borders between disc and lateral lobes (Fig. 62); legs typical of this subgenus; tegmina rather long and wide, with majority of Sc branches more or less parallel to majority of oblique branches situated between radial area and anal tegminal edge (however, these Sc branches partly irregular; Fig. 64), and with stridulatory apparatus as in Fig. 61; hind wings with distal half of costal part as in Fig. 65; last abdominal tergite roundly truncate at apex; epiproct similar to that of *V. (P.) ashaninka* sp. nov. but slightly shorter and not spine-like in distal part; paraprocts small and more or less rounded; cerci rather short, moderately thick in proximal half, clearly thinner in subdistal part, barely thicker (than subdistal part) in distal part which strongly curved upwards and with characteristic medial convexity (small rounded projection) near bending point (Figs 72–75); genital plate slightly longer than in *V. (P.) ashaninka* sp. nov., narrower in distal part, and with less deep posteromedian notch and narrower apical lobules around it (Fig. 74); genitalia with sclerotized and semisclerotized parts more or less similar to those of subgenus *Arcuadana* Gorochov et Cadena-Castañeda, 2015 (Figs 76, 77).

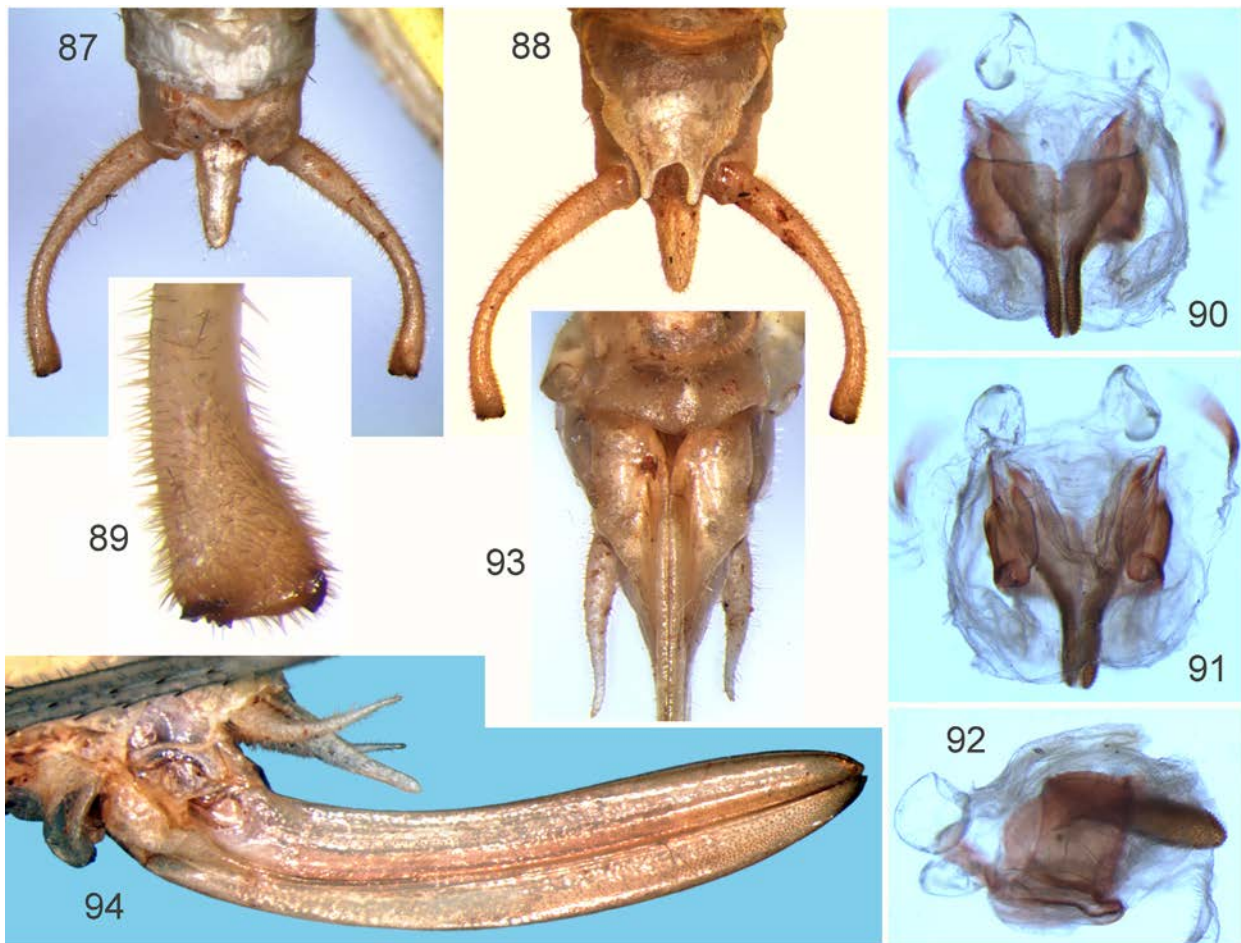
Female unknown.



Figs 66–77. *Viadana* Walk.: 66–71 – *V. (Paraviadana) ashaninka* sp. nov.; 72–77 – *V. (Viadana) rostrata* sp. nov. Male abdominal apex from above (66, 72) and from below (68, 74); distal part of left male cercus from above (67) as well as from below and partly from behind (73); this cercus from side (75); ovipositor from side (69); female genital plate from below (70); male genitalia from above (71, 76) and from side (77).



Figs 78–86. *Tomeopera* Br.-W.: 78–81 – *T. parallela* sp. nov.; 82–86 – *T. cellulata* sp. nov. Head with pronotum from side (78, 83) and from above (79, 82); stridulatory apparatus of male tegmina (84); left tegmen of female (80) and male (85); distal half of costal part of hind wing (81, 86).



Figs 87–94. *Tomeoephera* Br.-W.: 87–92 – *T. cellulata* sp. nov.; 93, 94 – *T. parallela* sp. nov. Abdominal apex of male (87, 88) and female (93) from above (87) and from below (88, 93); distal part of left male cercus from above and slightly medially (89); male genitalia from above (90), from below (91) and from side (92); ovipositor from side (94).

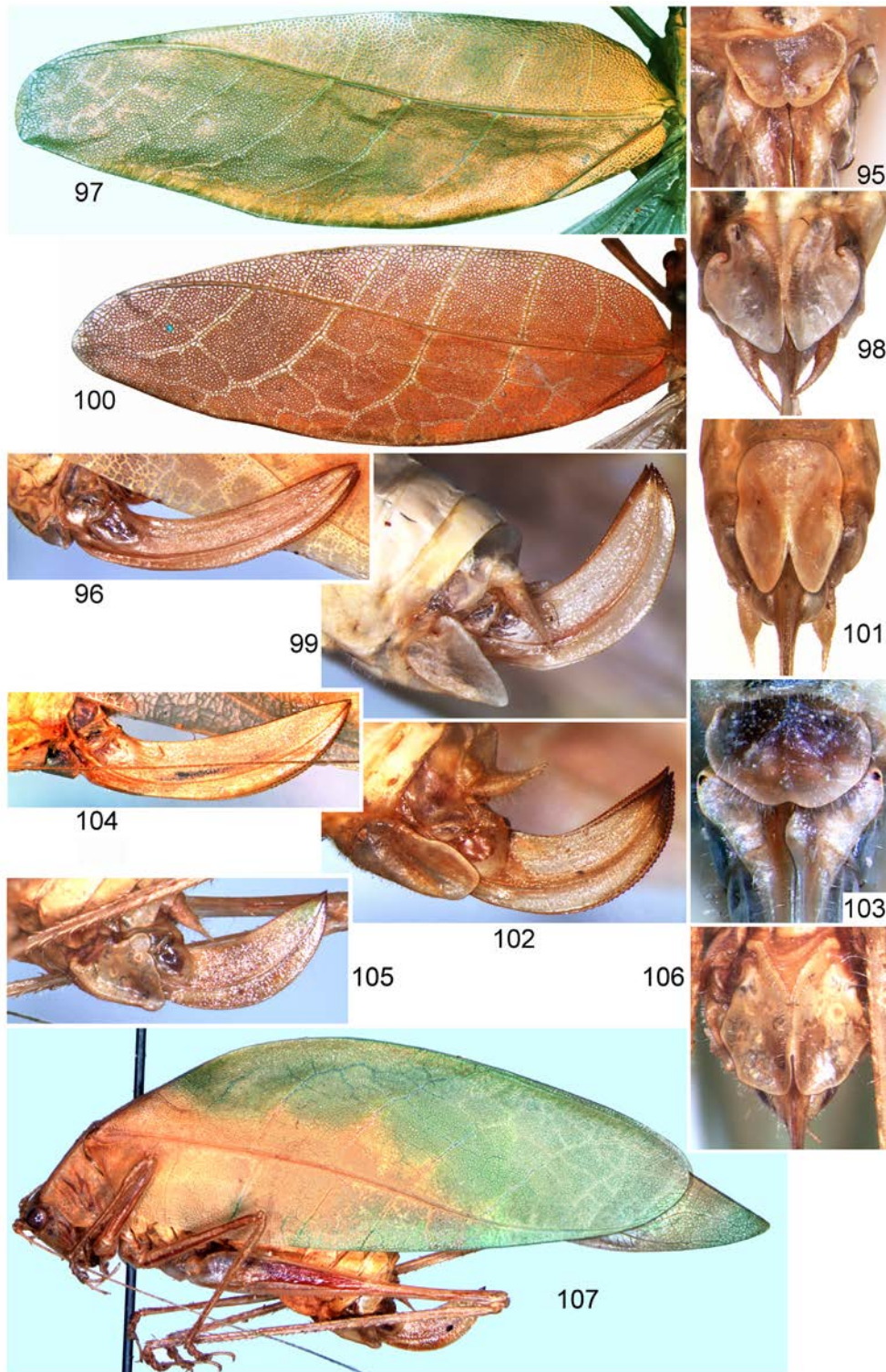
Length (mm). Body 17.3; body with wings 33.0; pronotum 4.4; tegmina 27.0; hind femora 13.6.

Comparison. The new species is most similar to *V. (V.) bulbosa* Gorochov, 2015 in the shape of male cerci, but the upper rostral tubercle has a wider apical part not separated from its basal part by any dorsal concavity, the male tegmen lacks a longitudinal row from distinct crossveins (connected subdistal parts of oblique branches situated between R and anal tegminal edge) as well as darkened marks near these crossveins, the distal parts of male cerci are not inflated in the profile, and the male genitalia have their sclerotized parts different in the shape (Fig. 76; Gorochov 2015: fig. 25). From all the other species of this subgenus with known males, the new species differs in the above-mentioned structure of male cerci and

male genitalia, and from six species of *Viadana* s. str. with unknown males, in the tegmina clearly narrower [from *V. (V.) amboro* Gorochov, 2015 and *V. (V.) piracicabae* Piza, 1969] or with less transverse distal halves of oblique branches situated between R and anal tegminal edge [from *V. (V.) transversa* Walker, 1869, *V. (V.) brasiliensis* (Brunner-Wattenwyl, 1878 and *V. (V.) aguarico* Gorochov, 2015], or in the apical part of upper rostral tubercle clearly wider [from *V. (V.) lobata* (Brunner-Wattenwyl, 1878)].

***Viadana (Viadana) bulbosa* Gorochov, 2015**
(Figs 95, 96)

Material studied. PERU: 1 female, Junin Department, Satipo Prov., 12 km N of Satipo Town,



Figs 95–107. *Viadana* Walk., female: 95, 96 – *V. (Viadana) bulbosa* Gor.; 97–99 – *V. (V.) obliqua* Gor.; 100–102 – *V. (V.) ?lobaba* (Br.-W.); 103, 104 – *V. (Proviadana) proxima* Gor.; 105–107 – *V. (V.) parobliqua* sp. nov. Genital plate from below (95, 98, 101, 103, 106); ovipositor with genital plate from side (96, 99, 102, 104, 105); left tegmen (97, 100); body from side (107).

“Concesion de Conservacion de la Universitaria”, 11.2031563°S, 74.6194062°W, ~600 m, primary/secondary forest, at light, 25–27 November 2017, A. Gorochov, G. Irisov.

Description. *Female* (nov.). General appearance very similar to that of male (Gorochov and Cadena-Castañeda 2015) including structure and colouration of tegmina (four oblique branches between radial area and anal tegminal edge connected with each other in subdistal parts by one row from distinct longitudinal but slightly arcuate crossveins, and almost each of areas between these veins having small darkish posterior mark); genital plate slightly transverse, with round posterior part having small angular posteromedian notch, keel-like median (longitudinal) convexity, and a pair of concavities around it (Fig. 95); ovipositor as in Fig. 96.

Length (mm). Body 16.0; body with wings 35.0; pronotum 4.3; tegmina 27.0; hind femora 13.0; ovipositor 8.5.

Male sufficiently described in original species description (Gorochov and Cadena-Castañeda 2015).

Remarks. This species was described for one male from the Ucayali Department of Peru, and the above-mentioned female increases *V. bulbosa* area up to the Satipo vicinity.

***Viadana (Viadana) obliqua* Gorochov, 2015**
(Figs 97–99, 124)

Material studied. PERU, Junin Department, Satipo Prov.: 4 males, 2 females, Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov; 2 females, 12 km N of Satipo Town, “Concesion de Conservacion de la Universitaria”, 11.2031563°S, 74.6194062°W, ~600 m, primary/secondary forest, at light, 25–27 November 2017, A. Gorochov, G. Irisov.

Description. *Female* (nov.). General appearance very similar to that of male (Gorochov and Cadena-Castañeda 2015), but tegmina barely wider (with strongly arcuate anal edge; Fig. 97) and without stridulatory apparatus, last abdominal tergite distinctly concave posteriorly, epiproct in shape of almost equilateral triangle and reaching middle of cerci, cerci unspecialized and gradually narrowing to thin distal parts, genital plate large and more or less flattened but with ventromedian (longitudinal) keel-

like convexity (its proxilateral edge with characteristic notch, and its distal part roundly angular but with rather deep and narrow posteromedian notch; Figs 98, 124), and ovipositor as in Fig. 99.

Length (mm). Body 16.0–18.0; body with wings 22.0–24.0; pronotum 3.8–4.1; tegmina 25.0–27.0; hind femora 13.5–14.0; ovipositor 5.0–5.5.

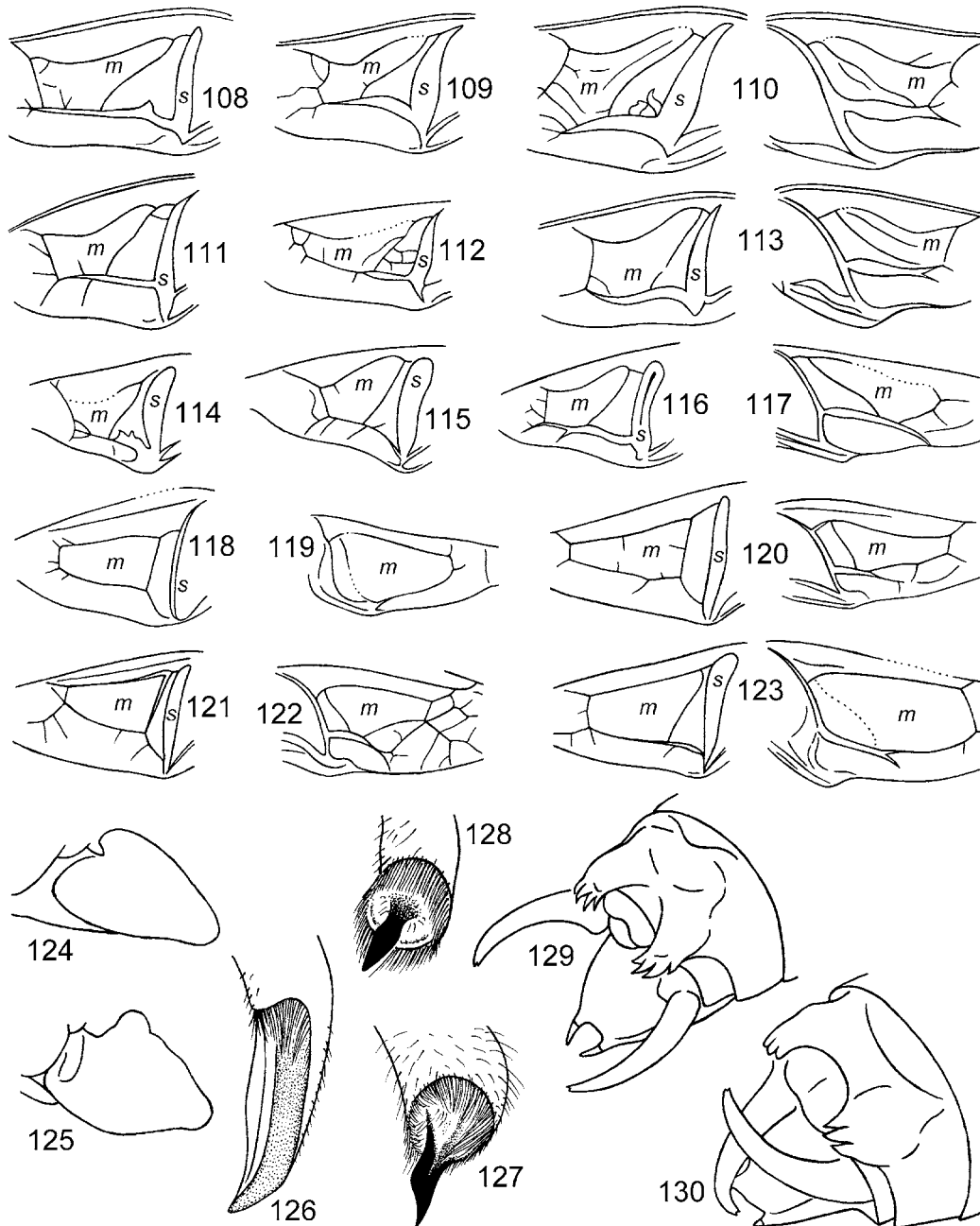
Male as in original description (Gorochov and Cadena-Castañeda 2015).

***Viadana (Viadana) parobliqua* sp. nov.**
(Figs 105–107, 125)

Etymology. This species is named after *V. obliqua*, a Peruvian congener similar to the new species in the structure of female genital plate.

Type material. *Holotype* – female, ECUADOR: ~30 km EES of Tena City, “Chuva Urcu” on Rio Cusano, lowlying forest, December 2005, A. Ovtshinikov, D. Smolnikov.

Description. *Female* (holotype). General appearance more or less similar to that of *V. (V.) obliqua*. Body colouration yellowish to greenish (uniformly greenish in living condition ?); upper rostral tubercle small, with very narrow (almost vertically lamellar) apical part, with a pair of small inflations (partly fused with each other) at base of this tubercle, and with small but distinct dorsal notch between these inflations and apical part of this tubercle in profile; pronotum with disc moderately narrow, having anterior edge slightly concave, posterior edge clearly convex, and lateral edges subparallel and almost keel-like, as well as with lateral lobes as in Fig. 107; tegmina with most part of costal edge almost straight, with anal edge distinctly (but not strongly) arcuate, with five more or less arcuate branches on R, with lateral (anterior) branch of MP+CuA1 rather short and strongly curved near its base (Fig. 107), and without well developed stridulatory apparatus in dorsal field; hind wings with apical portion of costal part somewhat protruding beyond tegminal apices (Fig. 107) and more or less similar to apical tegminal portion in venation; legs very similar to those of *V. obliqua*; last tergite rather short (somewhat shorter than other abdominal tergites) and simple; epiproct elongately triangular, with roundly angular apex and median longitudinal groove (fold); cerci unspecialized, typical of *Viadana* females; genital plate very large, similar to that of *V. obliqua* (Fig. 106) and having each lateral part with angularly rounded middle projec-



Figs 108–130. Subtribes Anaulacomerina (108–113), Pyncopalpina (114, 115), Viadanina (116, 117, 124, 125) and Phaneropterina (118, 119), and tribes Dysoniini (120), Microcentrini (121) and Scudderiini (122, 123, 126–130), schematically: 108 – *Anaulacomera uncinata* Heb.; 109 – *Separatula falcata* (Giglio-Tos); 110 – *Abrodiaeta propinqua* sp. nov.; 111 – *Rostellula santacruzii* sp. nov.; 112 – *R. minutissima* sp. nov.; 113 – *Grammadera tricaudata* Gor.; 114 – *Pyncopalpa bicordata* (Saint-Fargeau et Serv.); 115 – *Theia carinata* Gor.; 116 – *Viadana biloba* Gor.; 117 – *Tomeoptera semilata* Gor.; 118 – *Nephothra tibialis* Uv.; 119 – *Phaneroptera falcata* (Poda); 120 – *Machimoides rehni* Gor.; 121 – *Microcentrum retinerve* (Burm.); 122 – *Scudderia mexicana* (Sauss.); 123 – *Euceraia sanguinea* Piza; 124 – *V. obliqua* Gor.; 125 – *V. parobliqua* sp. nov.; 126 – *Theudoria melanocnemis* (Stål); 127 – *Th. diversa* (Br.-W.); 128 – *Th. pyrrhocnemis surinam* subsp. nov.; 129 – *Ligocatinus paraguayi* sp. nov.; 130 – *L. spinatus* (Br.-W.). Stridulatory apparatus of left (108, 109, 111, 112, 114, 115, 116, 118, 121), right (117, 119, 122) or both (110, 113, 120, 123) tegmina; female genital plate from side (124, 125); distal part of cercus (126, 127) and of its lateral branch (128) from below/behind (127) and from above/behind (128); male abdominal apex from side/above/behind (129, 130). Abbreviations: *m* – mirror; *s* – stridulatory vein. [130 – after photograph in OSF, modified].

tion directed upwards (in *V. obliqua*, this projection directed upwards/forwards and with distinct but small notch located before this projection in profile; see Figs 124 and 125); ovipositor short (its shape as in Fig. 105).

Male unknown.

Length (mm). Body 16.0; body with wings 30.0; pronotum 3.9; tegmina 24.0; hind femora 13.0; ovipositor 4.8.

Comparison. The new species is most similar to *V. obliqua* in the shape and size of female genital plate, but it differs from the latter species in the upper rostral tubercle with a distinct notch in profile as well as in the above-mentioned characters of female genital plate. From *V. (V.) lobata* having the female genital plate also very large, the new species is distinguished by this plate wider and with distinct dorsolateral projections; from *V. (V.) rostrata* sp. nov., by the apical part of upper rostral tubercle distinctly narrower (almost lamellar); from *V. (V.) curvicercata* (Brunner-Wattenwyl, 1891), by the lateral (anterior) branch of tegminal MP+CuA1 distinctly longer; from *V. (V.) transversa*, by the branches of tegminal R more arcuate and more oblique; from *V. (V.) delicatula* Piza, 1976, *V. (V.) festae* (Giglio-Tos, 1898) and *V. (V.) diegomendesi* Cadena-Castañeda, 2015, by the space between tegminal Sc and anal tegminal edge clearly wider; and from all the other species of this subgenus, by the female genital plate larger, and ovipositor shorter. Differences of the new species from *V. (V.) hamata* Gorochov, 2015, *V. (V.) ultrahamata* Gorochov, 2015 and *V. (V.) satipo* Gorochov, 2015 with only males known are less understandable, but the anal edge of tegmen in *V. hamata* is distinctly less convex, distal branches on R in the tegmina of *V. ultrahamata* are more sloping, and dorsal edge of head rostrum in *V. satipo* is with less distinct notch in profile.

***Viadana (Viadana) ?lobata*
(Brunner-Wattenwyl, 1878)
(Figs 100–102)**

Material studied. PERU: 2 females, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, at light, 5–9 December 2017, A. Gorochov, G. Irisov;

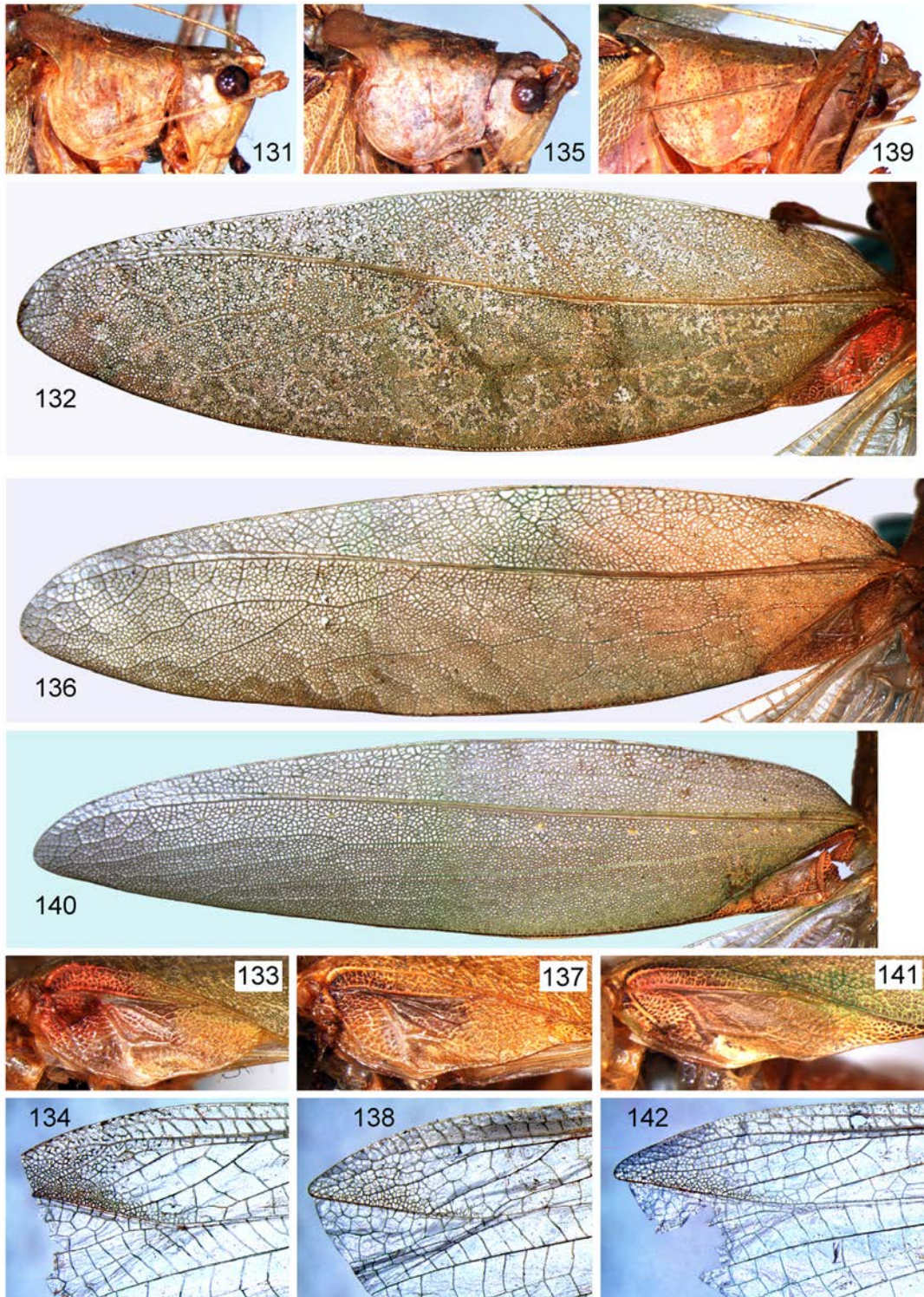
Remarks. The specimen is in accordance to the original description of this species which was de-

scribed from one female only (Brunner-Wattenwyl 1878: “Peru”). Its type locality is very wide, and this description is insufficient for exact species determination. However, the above-mentioned female is with a very large and rather flat genital plate having a pair of moderately long and apically rounded lobules (Figs 101, 102), and Brunner-Wattenwyl wrote that this plate in his type is “ampla, compressa, in lobos rotundatos producta” (Brunner-Wattenwyl 1878: 304). Colouration of this female is almost light brown with reddish tinge (Fig. 100) and similar to that of one of females (not types) depicted as this species in OSF; its genital plate is similar to that of females of *V. (V.) obliqua* and *V. (V.) parobliqua* but narrower, with roundly obtuse posterior lobes (in *V. obliqua* and *V. parobliqua*, these lobes are almost angular) and without distinct dorsolateral projections (for comparison see Figs 98, 99, 101, 102, 105, 106). Thus, we can determine this female as *V. (V.) lobata* in question.

***Viadana (Proviadana) proxima* Gorochov, 2015
(Figs 103, 104)**

Material studied. PERU: 3 females, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, at light, 5–9 December 2017, A. Gorochov, G. Irisov; 3 females, Junin Department, Satipo Prov., ~40 km NE of Satipo Town, environs of Calabaza Vill., ~2000 m, primary forest, at light, 16–17 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky.

Description. *Female* (nov.). General appearance very similar to that of male of this species and similar to that of females of *V. (P.) lobulata* Gorochov, 2015 and *V. (P.) illobulata* Gorochov, 2015. However, following differences from these females found: genital plate almost as in *V. illobulata*, i.e. with very small apical notch (Fig. 103); ovipositor intermediate between those of these species, i.e. slightly shorter and barely more curved than in *V. illobulata* but barely longer and less curved than in *V. lobulata* (Fig. 104); basal lobule of each lower valve of ovipositor (near place of fusion with gonangulum) approximately as in *V. illobulata* (distinctly smaller than in *V. lobulata*) but having very small and darkened proximal tubercle (this tubercle absent in one young female with insufficiently sclerotized integument) which



Figs 131–142. *Abrodiaeta* Br.-W., male: 131–134 – *A. propinqua* sp. nov.; 135–138 – *A. fruhstorferi* sp. nov.; 139–142 – *A. minasgerais* sp. nov. Head with pronotum from side (131, 135, 139); left tegmen (132, 136, 140); stridulatory apparatus of right tegmen (133, 137, 141); distal part of hind wing (134, 138, 142).

absent in all females of *V. lobulata* and *V. illobulata* (Fig. 103).

***Tomeophera cellulata* sp. nov.**

(Figs 82–92)

Etymology. This species name is the Latin word “cellulata” (cellular), because its tegminal costal area has cellular venation.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., 12 km N of Satipo Town, “Concesion de Conservacion de la Universitaria”, 11.2031563°S, 74.6194062°W, ~600 m, primary/secondary forest, at light, 25–27 November 2017, A. Gorochoy, G. Irisov.

Description. *Male* (holotype). General appearance more or less similar to some other congeners having greenish (not whitish) body colouration, but with following characteristic features: upper rostral tubercle of head rather long and vertically compressed (almost lamellar), barely projecting before anterior edges of antennal scapes, with moderately low and rounded apex in profile (Figs 82, 83); anterior part of head clearly oblique in profile (Fig. 83); head colouration yellowish (greenish in living condition) with almost whitish labrum, palpi and marks behind eyes, as well as with rose eyes; pronotum with very low keels along borders between disc and lateral lobes, with slightly concave anterior and rounded (convex) posterior edges of disc, and with shape of lateral lobes as in Fig. 83; pronotal colouration uniformly yellowish with greenish tinge; tegmina long, moderately narrow, with strongly convex costal and almost straight anal edges, with cellular venation of costal area (i.e. this area without longitudinal pseudoveins) and three slightly oblique branches in distal half of lateral field (between radial area and anal tegminal edge), and with stridulatory apparatus as in Fig. 84; tegminal colouration greenish with yellowish tinge and almost transparent membranes in dorsal field and near it (Figs 84, 85); hind wings with distal area similar to tegmina in colouration and with transparent other parts (Fig. 86); abdominal apex with rather wide and rounded but not deep posteromedian notch of last tergite, with moderately long and narrow (almost finger-like) epiproct, with small rounded paraprocts, and with rather long and arcuate cerci having apical part barely flattened as well as slightly widened and provided with two small dark denticles (these denticles shortly keel-like and

with additional very small conical denticles near upper keel-like denticle; Figs 87–89); genital plate moderately short, narrowing to apex having a pair of almost spinule-like posterior lobules as well as rather deep and moderately wide (almost rounded) notch between them (Fig. 88); genitalia with a pair of large semisclerotized structures having rather long anterior projections located near each other (these projections with numerous very small denticles; Figs 90–92).

Female unknown.

Length (mm). Body 19.0; body with wings 42.0; pronotum 4.1; tegmina 28.0; hind femora 16.5.

Comparison. The new species is distinguished from majority of congeners by the costal tegminal area without longitudinal pseudoveins (which in some species look almost as Sc branches), distal branches between the radial area and anal tegminal edge more oblique (less parallel to the longitudinal axis of tegmen), male cerci with different structure of their apical part, and male genitalia having their large semisclerotized structures with denticulate anterior projections. From *T. ovatipennis* (Bruner, 1915), the new species differs in the tegmina much longer.

***Tomeophera piracicabensis* (Piza, 1971), sp. dist.**

Phaneropterops piracicabensis Piza, 1971 (southeast of Brazil).

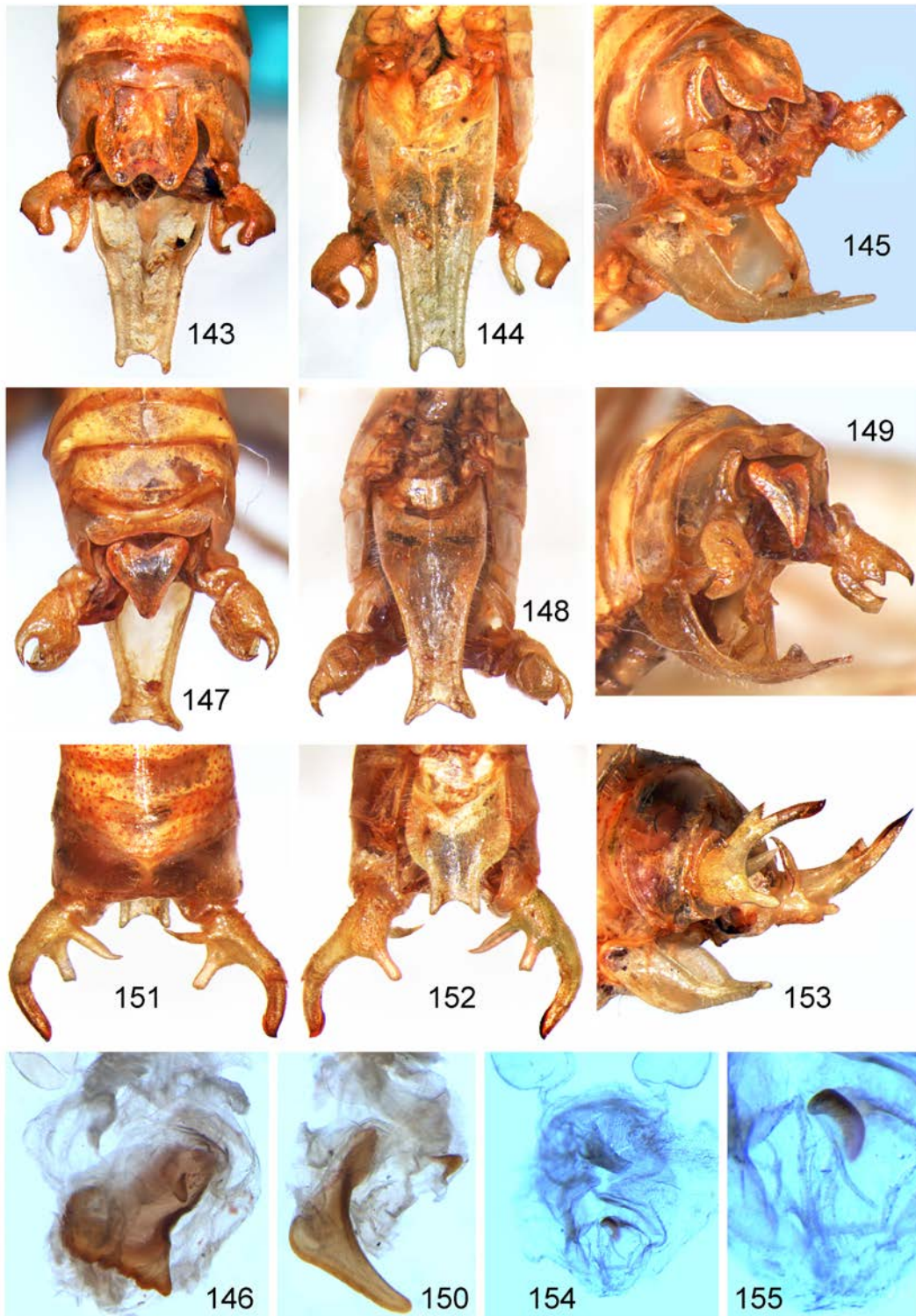
Note. This species was erroneously synonymized with *T. modesta* Brunner-Wattenwyl, 1891 by Chamorro-Rengifo and Braun (2010). Later it was restored from this synonymy (Gorochoy and Cadena-Castañeda 2015), but in OSF, it is considered as a synonym of *T. modesta modesta* [!] without any ground. However, it is very clearly visible from the photographs of their holotypes (OSF) that tegmina of *T. piracicabensis* are distinctly wider and with numerous (not less than five) longitudinal pseudoveins in the costal area, but tegmina of *T. modesta* are clearly narrower and with two longitudinal pseudoveins in this area only.

***Tomeophera parallela* sp. nov.**

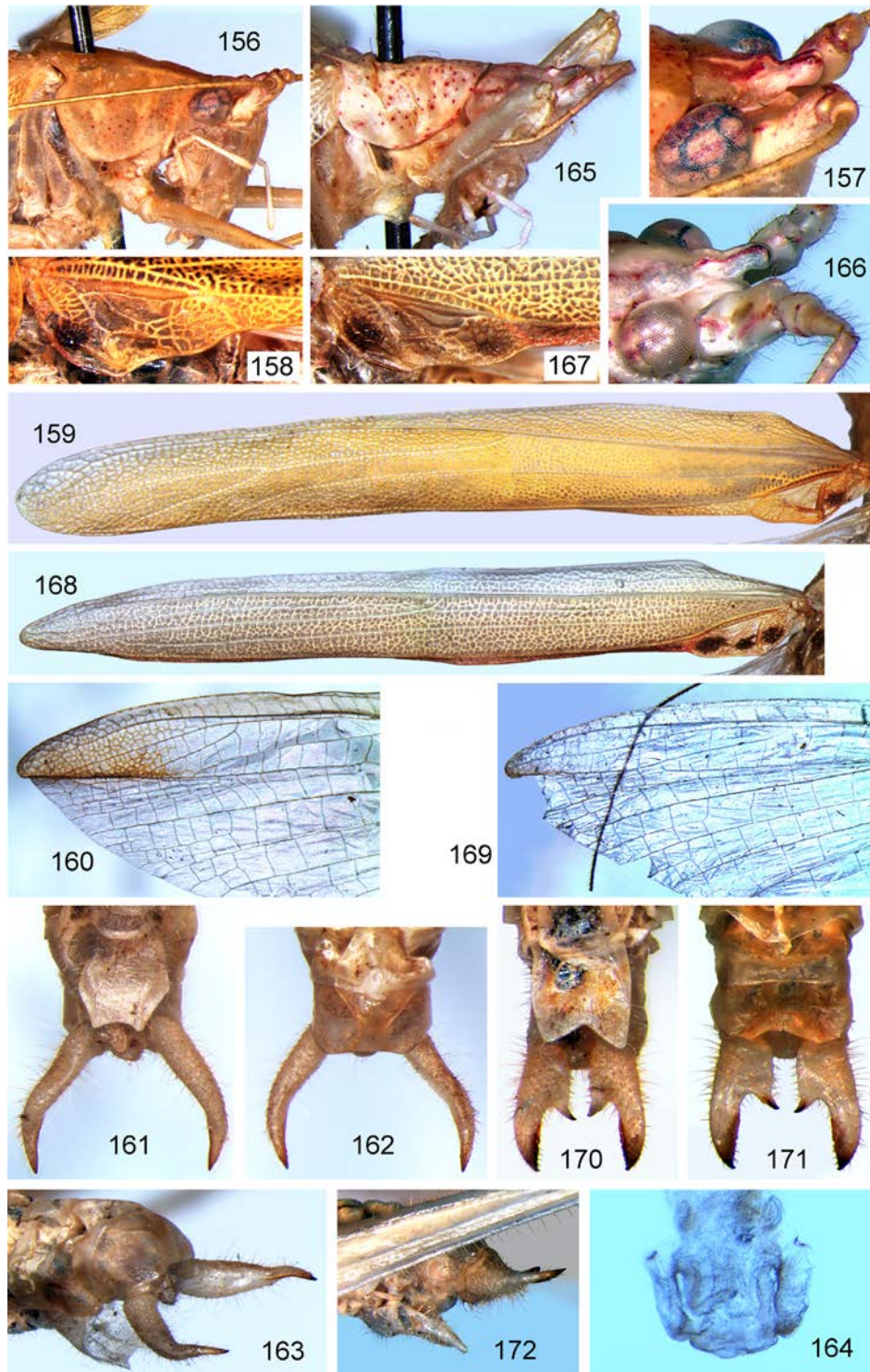
(Figs 78–81, 93, 94)

Etymology. This species name is the Latin word “parallela” (parallel), because its longitudinal venation is very parallel to the longitudinal axis of tegmen.

Type material. *Holotype* – female, PERU: Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N



Figs 143–155. *Abrodiaeta* Br.-W., male: 143–146 – *A. (Sclerodiaeta) propinqua* sp. nov.; 147–150 – *A. (S.) fruhstorferi* sp. nov.; 151–155 – *A. (Barodiaeta) minasgerais* sp. nov. Abdominal apex from above and slightly behind (143, 147, 151), from below (144, 148, 152) and from side/behind (145, 149, 153); genitalia from side/above (146, 150, 154); region of unpaired genital sclerite from side/above (155).



Figs 156–172. *Rostellula* gen. nov., male: 156–164 – *R. santacruzi* sp. nov.; 165–172 – *R. minutissima* sp. nov. Head with pronotum from side (156, 165); rostral region of head from side (157, 166); stridulatory apparatus of right tegmen (158, 167); left tegmen (159, 168); distal part of hind wing (160, 169); abdominal apex from below (161, 170), from above (162, 171), from side and slightly behind (163), and from side (172); genitalia from above (164).

of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov.

Description. *Female* (holotype). General appearance somewhat similar to that of *T. cellulata* sp. nov. but with following characteristic features: body colouration yellowish with greenish tinge on pronotum, tegmina and areas in distal parts of hind wings (in living condition, body colouration mainly light greenish), with light rose eyes, with two whitish yellow spots on lateral tegminal field (Fig. 80), and with transparent rest part of hind wings (Fig. 81); head and pronotum similar to those of this species but with upper rostral tubercle slightly narrower (dorsal view) in distal part (Fig. 79), and with pronotal lateral lobe having posterior edge almost vertically straight (*vs.* strongly convex under humeral notch; for comparison see Figs 78 and 83); tegmina very long, with almost straight costal and anal edges, with costal area having two long longitudinal pseudoveins not far from Sc and one shorter pseudovein near middle part of costal edge, and with five longitudinal parallel branches between radial area and anal tegminal edge (subanal branch somewhat sinuate; Fig. 80); hind wings with distal half of costal part as in Fig. 81; last abdominal tergite posteriorly truncate; epiproct and paraprocts also similar to those of *T. cellulata* sp. nov., but epiproct longer and distinctly protruding beyond cercal apices; cerci unspecialized, gradually narrowing to thin distal part (Fig. 94); genital plate transverse (very short), with roundly angular posteromedian part practically lacking any apical notch but having ventromedian keel-like convexity (Fig. 93); ovipositor rather long and barely arcuate, without any denticles along dorsal and ventral edges (Fig. 94).

Male unknown.

Length (mm). Body 21.5; body with wings 43.0; pronotum 4.4; tegmina 31.0; hind femora 17.5; ovipositor 9.7.

Comparison. The new species is most similar to *T. modesta* Brunner-Wattenwyl, 1891 in the costal tegminal edge almost straight (not strongly convex) and in the presence of only two long longitudinal pseudoveins in the costal tegminal area, but it is distinguished from the latter species by the upper rostral tubercle narrower (dorsal view) and longer (in *T. modesta*, this tubercle somewhat not reaching apices of antennal scapes), branches in the distal half of lateral field (located between the radial area

and anal tegminal edge) slightly more parallel to the longitudinal axis of tegmen, and ovipositor without any denticles on the dorsal and ventral edges (at least from *T. m. angusta* Gorochov, 2015). From *T. gladiatrix* Brunner-Wattenwyl, 1878, the new species differs in the ovipositor distinctly longer (in *T. gladiatrix*, hind femur is approximately 2.5 times as long as ovipositor; but in the new species, this ratio is not more than 2); from *T. ovatipennis*, in the tegmina distinctly longer; and from all the other congeners, in the costal tegminal area clearly less convex laterally and having two long longitudinal pseudoveins (only *T. ucayali* Gorochov, 2015 has two long longitudinal pseudoveins in this area, but they are situated near the costal tegminal edge in *T. ucayali* and less far from Sc in the new species; Fig. 80).

Subtribe Anaulacomerina Brunner-Wattenwyl, 1878

Note. This subtribe is characterized by the head rostrum narrow and usually rather simple (consisting of upper and lower rather small tubercles with their apices in contact or almost in contact with each other), tegmina having primitive shape and structure (this shape is more or less narrow, and RS branches run from the common stock), mirror of male stridulatory apparatus with the proxilateral corner long and strongly narrowed (as in Viadanina and Pycnopalpina, but not as in numerous other phaneropterines; for comparison see Figs 108–113, 114–117 and 118–123), and styles of male genital plate absent (fused with this plate as in other subtribes of Phaneropterini). In accordance to Cadena-Castañeda (2015b), Anaulacomerina contains the following genera: *Anaulacomera* Stål, 1873; *Abrodiaeta* Brunner-Wattenwyl, 1878; *Grammadera* Brunner-Wattenwyl, 1878; *Mendesius* Piza, 1960; *Phaneropteroides* Piza, 1971; *Montealegrezia* Cadena-Castañeda, 2012; *Tenellulus* Cadena-Castañeda, 2012. However, this generic list is here supplemented by two new genera (*Rostellula* gen. nov. and *Separatula* gen. nov.), and systematic position of *Mendesius*, *Phaneropteroides* and *Tenellelus* are in need of examination because structure of their male tegminal mirror is unclear or unknown.

Genus *Abrodiaeta* Brunner-Wattenwyl, 1878

Note. The genus includes *A. lanceolata* Brunner-Wattenwyl, 1878 (type species) and four new spe-

cies described below. All the species have their body structure more or less diverse and should be grouped into three subgenera which are pairwise connected with each other by some features: these subgenera and features are characterized below, in the key to *Abrodiaeta* subgenera.

1. Upper rostral tubercle narrowly rounded at apex (almost acute) and distinctly projected before lower rostral tubercle (Fig. 242); lateral pronotal lobe clearly longer than high (Fig. 241); tegmen narrow, with branches of Sc forming more or less cellular venation and one longitudinal pseudovein (Fig. 245); last male abdominal tergite with rather long posteromedian lobe (or epiproct almost fused with last tergite) directed downwards (Figs 248, 249); male cerci simple, without branches (Figs 246, 248, 249); male genitalia with a pair of large symmetrical and rounded semisclerotized structures having numerous very small denticles (Fig. 250) subgenus *Abrodiaeta* s. str. [Composition: *Abrodiaeta lanceolata* Brunner-Wattenwyl, 1878 – type species of *Abrodiaeta*; *A. (A.) macricula* sp. nov.]
- Upper rostral tubercle rather widely rounded at apex (almost truncate) and practically not projected before lower rostral tubercle (Fig. 253); lateral pronotal lobes, tegmina and last abdominal tergite rather diverse in shape and structure (Figs 131, 132, 135, 136, 139, 140, 143, 145, 147, 149, 151, 153); male cerci complicate, with additional branches, hooks or lobes (Figs 143–145, 147–149, 151–153); male genitalia with one unpaired and slightly asymmetrical sclerite lacking very small denticles (Figs 146, 150, 154, 155) 2
2. Lateral pronotal lobe almost as long as high (Figs 131, 135); tegmen more or less wide, with normal (oblique and rather numerous) branches of Sc (Figs 132, 136); last male abdominal tergite with posteromedian lobe rather large (but not long) to very short; this lobe directed downwards/backwards (Figs 143, 145, 147, 149); male cerci short (Figs 143–145, 147–149); male genital plate significantly longer than wide (Figs 144, 148); male genitalia with large unpaired sclerite (Figs 146, 150) subgenus *Sclerodiaeta* subgen. nov. [Etymology: from “scleritum” (Latin morphological term) and “*Abrodiaeta*” (generic name). Composition: *Abrodiaeta (Sclerodiaeta) propinqua* sp. nov. – type species of *Sclerodiaeta*; *A. (S.) fruhstorferi* sp. nov.]
- Lateral pronotal lobe clearly longer than high (Fig. 139); tegmina moderately narrow, with branches of Sc forming cellular venation and one longitudinal pseudovein (approximately as in *Abrodiaeta* s. str.; Fig. 140); last male abdominal tergite without posteromedian lobe (Fig. 151, 153); male cerci clearly longer (Figs 151–153); male genitalia with very small unpaired sclerite (Figs 154, 155) subgenus *Barodiaeta* subgen. nov.

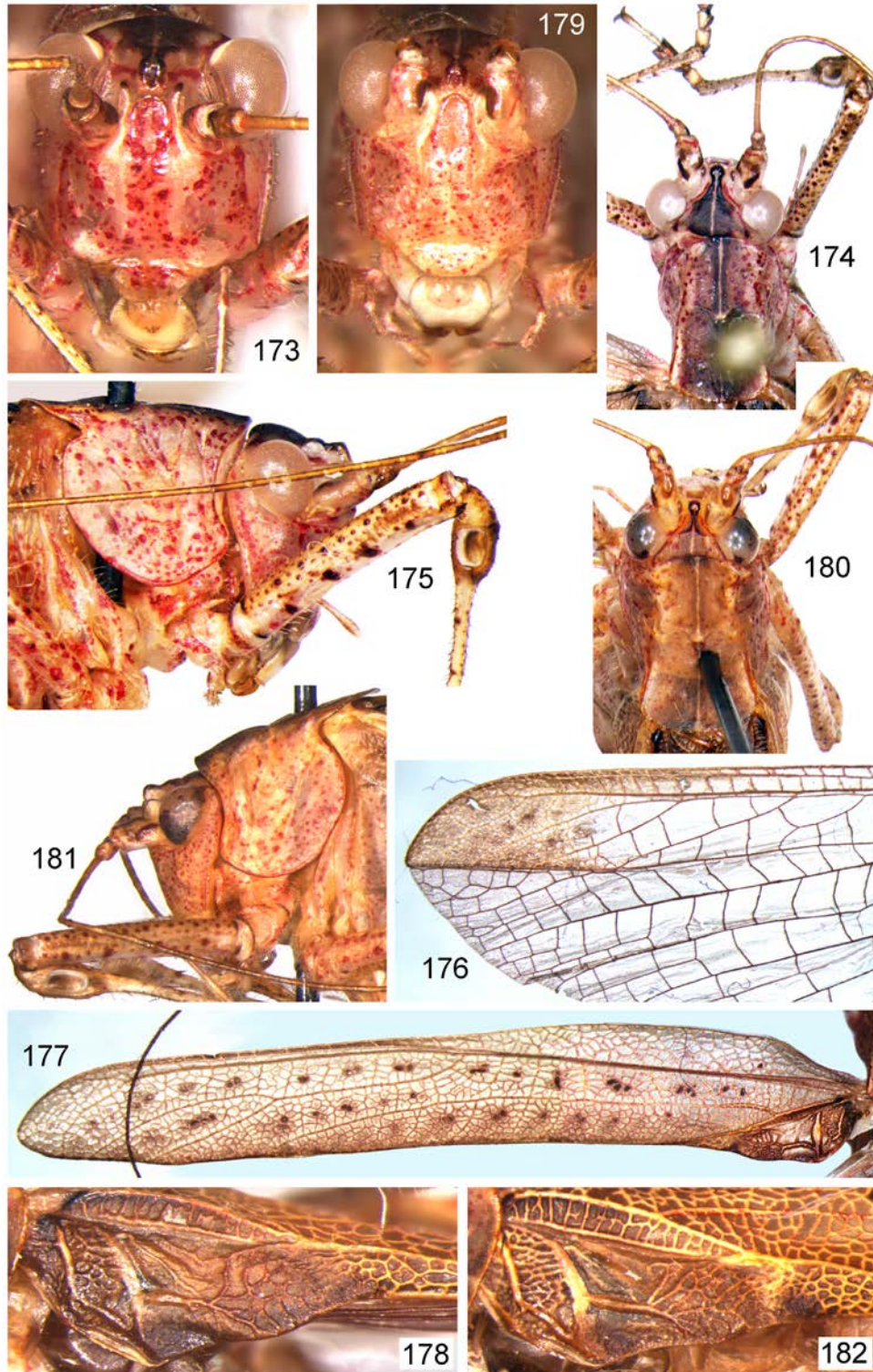
[Etymology: partial anagram of *Abrodiaeta* (generic name). Composition: *Abrodiaeta (Barodiaeta) minasgerais* sp. nov. – type species of *Barodiaeta*.]

***Abrodiaeta (Abrodiaeta) macricula* sp. nov.**
(Figs 241–252)

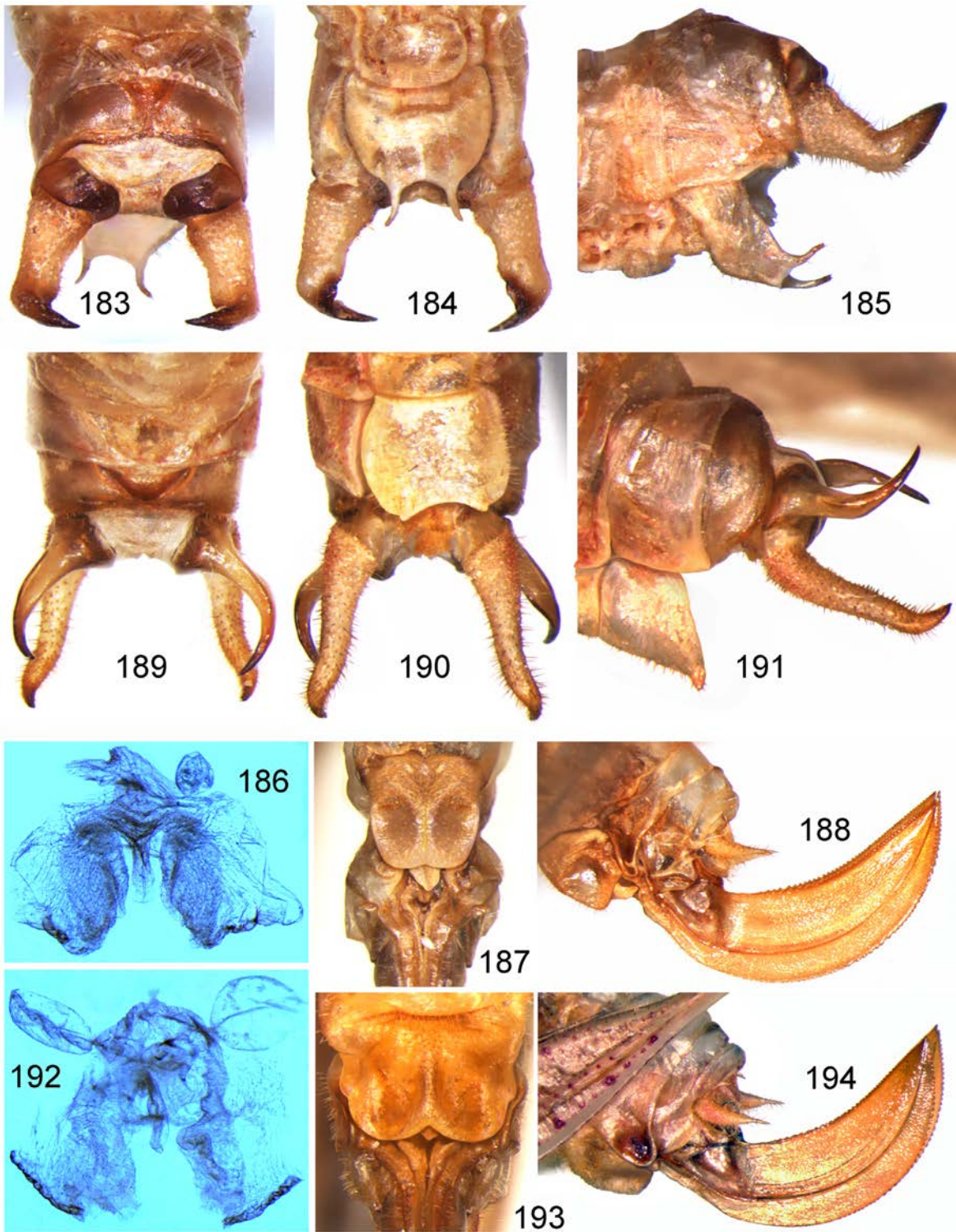
Etymology. Name of this species is the Latin word “macricula” (slender, slim) due to its thin body.

Type material. *Holotype* – male, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Ucayali River, environs of Sapani Vill., ~300 m, primary/secondary forest, at light, 26–31 October 2008, A. Gorochoy, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy. *Paratype* – female, same data as for holotype.

Description. Male (holotype). Body long and slender. Colouration yellowish (possibly having greenish tinge in living condition) with following marks: head and pronotum (Fig. 241) with longitudinal (median) whitish stripe running from base of upper rostral tubercle to posterior edge of pronotal disc, with small and dense light brown dots on dorsal part of head and on pronotal disc, and with a pair of light brown longitudinal lines along lateral edges of whitish median stripe on anterior two thirds of this disc; tegmina with numerous small darkish dots on anal parts and partly light greyish brown membrane of mirror (Figs 243–245); hind wings almost transparent but with light yellowish grey distal portion of costal part; legs with light brown distal parts of spinules; last tergite with light brown distal part of posteromedian lobe; cerci with brown apices (Figs 246, 248, 249). Upper rostral tubercle distinctly projected before lower rostral tubercle, with distal part narrow (almost finger-like) and directed forwards/upwards as well as having barely visible median groove on dorsum; this tubercle at base with a pair of small (low) convexities located above lateral ocelli and partly fused with each other dorsally (Fig. 242); lower rostral tubercle clearly shorter than upper rostral tubercle, with apex approximately as narrow as in latter tubercle and somewhat not reaching its ventral surface (Fig. 242); face distinctly oblique in profile (Fig. 241); scape almost four time as wide as apex of upper rostral tubercle. Pronotum rather long, with moderately narrow disc slightly narrowing to head and having straight anterior and convex posterior edges, and with lateral lobe as in Fig. 241. Wings long (hind wings somewhat longer than tegmina); tegmina



Figs 173–182. *Separatula* gen. nov., male: 173–178 – *S. adunca* sp. nov.; 179–182 – *S. falcata* (Giglio Tos). Head in front (173, 179); head with pronotum and most part of fore leg from above (174, 180) and from side (175, 181); distal part of hind wing (176); left tegmen (177); stridulatory apparatus of right tegmen (178, 182).



Figs 183–194. *Separatula* gen. nov.: 183–188 – *S. adunca* sp. nov.; 189–194 – *S. falcata* (Giglio Tos). Male abdominal apex from above and slightly behind (183, 189), from below (184, 190) and from side (185, 191); male genitalia from above (186, 192); female genital plate from below (187, 193); female abdominal apex with ovipositor from side (188, 194).

narrow, with Sc branches forming cellular venation and one longitudinal pseudovein, with RS normal but having three branches in distal half (Fig. 245), and with stridulatory apparatus as in Figs 243, 244. Legs long and very thin (hind femur almost not widened), with femora having only a pair of small apical denticles on hind femur, fore tibia having a pair of oval tympana and several small spinules on both ventral keels, middle tibia almost as fore one but without tympana, and hind tibia with somewhat longer and more numerous spinules on all four keels. Last tergite clearly longer than previous abdominal tergites, with large but rather narrow posteromedian lobe strongly and angularly curved downwards near its base; this base looking as a pair of rather short lobules (when viewed from above) and with median elevation partly crossed by narrow posteromedian concavity (groove); more distal part of this lobe having longitudinal dorsomedian concavity and a pair of spines at apex; epiproct more or less rounded and slightly inflated, visible behind this apex and having dorsal concavity located between above-mentioned spines (possibly, curved downwards distal part of above-mentioned lobe of last tergite in reality homologous to epiproct which, in this case, divided into two parts: dorsal part with spines, ventral part rounded and slightly inflated) (Figs 246, 248, 249); cerci rather short but not thick, with distal part arcuately curved upwards/medially, and with apical part acute and strongly sclerotized (Figs 246, 248, 249); genital plate somewhat elongate, narrowing to moderately narrow apex having a pair of rather small and angular posterior lobules as well as rounded and moderately shallow notch between them (Fig. 247); genitalia with a pair of large and rounded semisclerotized structures having numerous very small denticles (Fig. 250).

Female. General appearance as in male, but dots on dorsum of both head and pronotum indistinct, whitish median stripe on this dorsum less contrast (more or less cream), and dorsal field of both tegmina yellowish with darkened small dots in its anal two thirds; genital plate rather small, rounded, with median keel-like convexity widened basally (Fig. 251); ovipositor as in Fig. 252.

Length (mm). Body: male 21.0, female 24.0; body with wings: male 43.0, female 47.0; pronotum: male 4.8, female 5.1; tegmina: male 32.0, female 34.0; hind femora: male 23.0, female 27.0; ovipositor 9.3.

Comparison. The new species differs from *A. (A.) lanceolata* (it most similar and related spe-

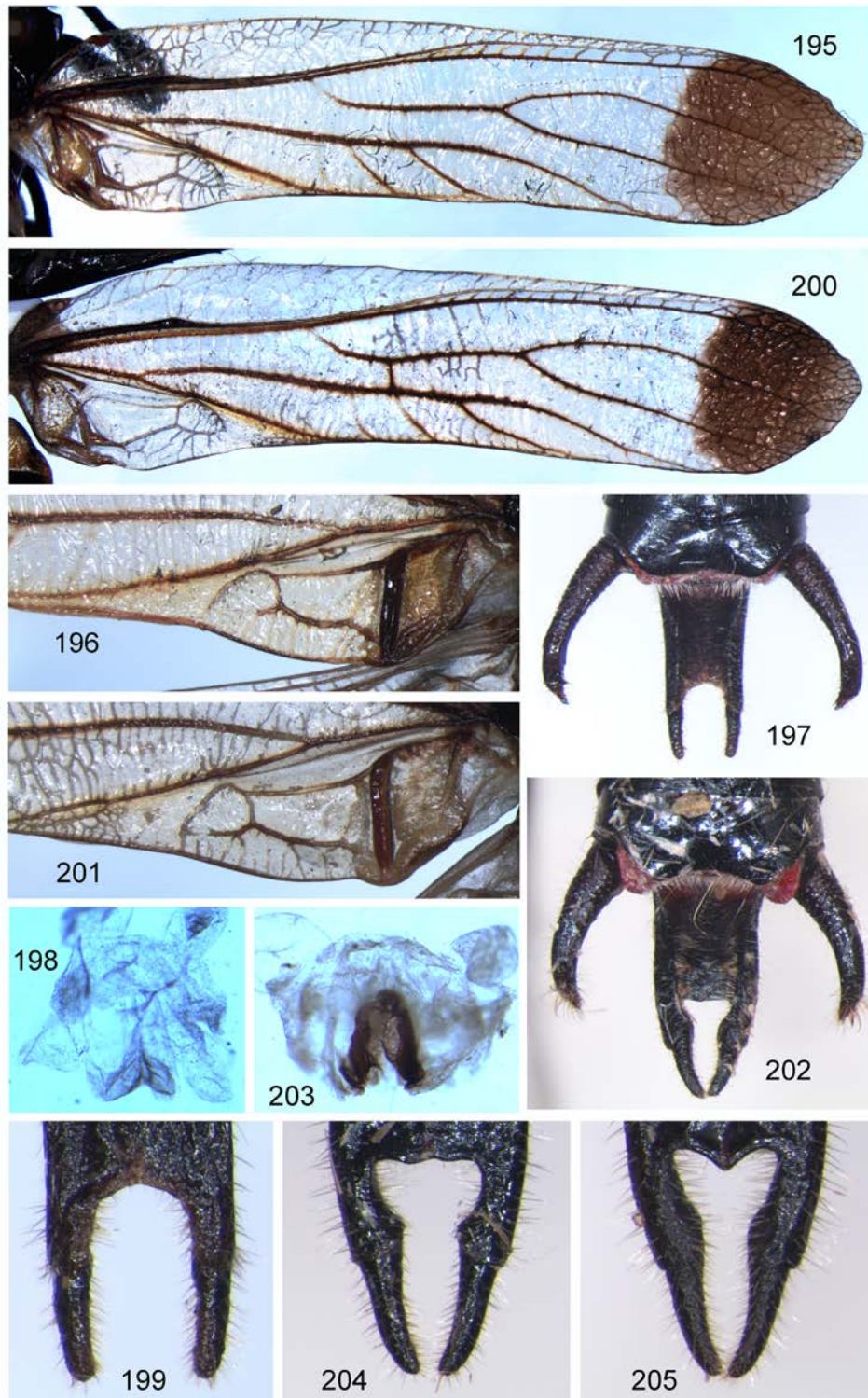
cies) in the posteromedian lobe of male last tergite clearly narrower and with spine-like (not angular) apical projections.

***Abrodiaeta (Sclerodiaeta) propinqua* sp. nov.**
(Figs 110, 131–134, 143–146)

Etymology. This name is the Latin word “propinqua” (related, nearest), because the new species is similar to *A. lanceolata* in the shape of male last abdominal tergite.

Type material. *Holotype* – male, BRAZIL: Minas Gerais State [“Minas Geraës”], 1897, “ex coll. Fruhstorfer”, “104-98”.

Description. *Male* (holotype). Body colouration light brown to yellowish but with brown eyes and rose dorsal tegminal field as well as with greenish tinge on rest part of tegmina and distal part of hind wings (probably mainly greenish in living condition). Head with slightly oblique anterior part in profile, with narrow rostrum having two small and simple tubercles (upper tubercle barely projected before lower tubercle, with somewhat widened and truncated apical part, and with dorsal surface having median groove and low lateral keels along dorsal edges of lateral ocelli; i.e. this tubercle almost as in Fig. 253). Pronotum somewhat elongate, with oblique anterior half of ventral edge of lateral lobes and their posteroventral part round; humeral notch distinct but not narrow and not very deep (Fig. 131); disc convex (almost roundly semitubular) but with flat hind lobe having widely rounded (almost roundly truncated) posterior edge. Tegmina (Fig. 132) long and rather wide, with slightly arcuate proximal half of costal edge and arcuate most part of anal edge, with RS rather short and having two branches, with RA having two distinct branches in distal part, and with stridulatory apparatus as in Figs 110, 132 and 133; hind wings with distal parts distinctly protruding beyond tegminal apices (their structure as in Fig. 134). Legs thin and rather long; all femora without spines, spinules or denticles (except for a pair of small apical denticles on hind femur); tibiae very thin, with several small spinules on ventral surface, with somewhat larger and more numerous spinules on dorsal surface of hind tibia, and with widened and flattened proximal part of fore tibia having oval (opened) and elongate tympana. Last abdominal tergite larger than other abdominal tergites, with wide and rather long posteromedian lobe directed backwards/downwards



Figs 195–205. *Aganacris* Walk., male: 195–199 – *A. sphex* Rehn; 200–205 – *A. ?nitida* (Perty). Right tegmen (195, 200); stridulatory apparatus of left tegmen (196, 201); abdominal apex from above (197, 202); genitalia from above (198, 203); apical part of genital plate (199, 204, 205).

as well as having roundly angular notch at apex and concave dorsomedian part, and with a pair of notches around this lobe rather deep and narrow (Figs 143, 145); epiproct located behind this lobe, rather small but elongately triangular and with narrowly rounded apex (Figs 143, 145); paraprocts small and rounded; cerci rather short and bifurcated near their base (dorsolateral branch thicker and strongly curved medially, with two small denticles on lateral edge and at apex; ventromedial branch thinner and less arcuate but with hooked apical part; Figs 143–145); genital plate rather long, with moderately narrow distal third having a pair of small finger-like posterolateral lobules and almost rounded notch between them (Fig. 144). Genitalia with large unpaired and asymmetrical sclerite (its shape as in Fig. 146).

Female unknown.

Length (mm). Body 22.0; body with wings 38.0; pronotum 4.6; tegmina 32.0; hind femora 16.0.

Comparison. The new species is similar to *A. (A.) lanceolata* and *A. (A.) macricula* in the shape of its male last abdominal tergite but distinguished from these species by the characters given in the key to *Abrodiaeta* subgenera.

***Abrodiaeta (Sclerodiaeta) fruhstorferi* sp. nov.**

(Figs 135–138, 147–150, 253)

Etymology. This species is named after its collector.

Type material. *Holotype* – male, BRAZIL: Minas Gerais State [“Minas Geraës”], 1897, “ex coll. Fruhstorfer”, “104-98”.

Description. *Male* (holotype). General appearance somewhat similar to that of *A. (S.) propinqua* sp. nov. (Figs 135, 253) but with following differences: tegmina clearly narrower (Fig. 136), with dorsal field light brown to yellowish but having transparent region of mirror, and with stridulatory apparatus as in Figs 136 and 137; hind wings with venation as in Fig. 138; last abdominal tergite shorter (almost as other abdominal tergites in length) but with dorsal part even shorter (its anteromedian edge distinctly concave), posteromedian lobe also very short and curved downwards as well as having barely concave posterior edge and a pair of small (not deep) notches around this lobe (Figs 147, 149); epiproct larger, with almost angular apex and slightly concave median part (Figs 147, 149); cerci with dorsolateral and ventromedial branches somewhat shorter than in *A. (S.) propin-*

qua sp. nov. and different in shape (first branch with strong apical lateral hook directed medially, and with acute-angled medial projection clearly shorter than above-mentioned hook; second branch also not curved but almost cup-like, i.e. roundly widened and strongly concave dorsolaterally, and with small apical hook directed more or less laterally; Figs 147–149); genital plate with posterolateral lobules somewhat wider and dorsoventrally flattened, and with apical notch having sinuate edges (Fig. 148); genitalia with unpaired and asymmetrical sclerite lacking teeth as well as narrower than in *A. (S.) propinqua* sp. nov. (Fig. 150).

Female unknown.

Length (mm). Body 21.0; body with wings 37.0; pronotum 5.1; tegmina 32.0; hind femora 18.0.

Comparison. The new species differs from *A. (S.) propinqua* sp. nov. in the features listed above. From *A. (A.) lanceolata* and *A. (A.) macricula*, *A. (S.) fruhstorferi* sp. nov. is distinguished by the characters given in the key to *Abrodiaeta* subgenera.

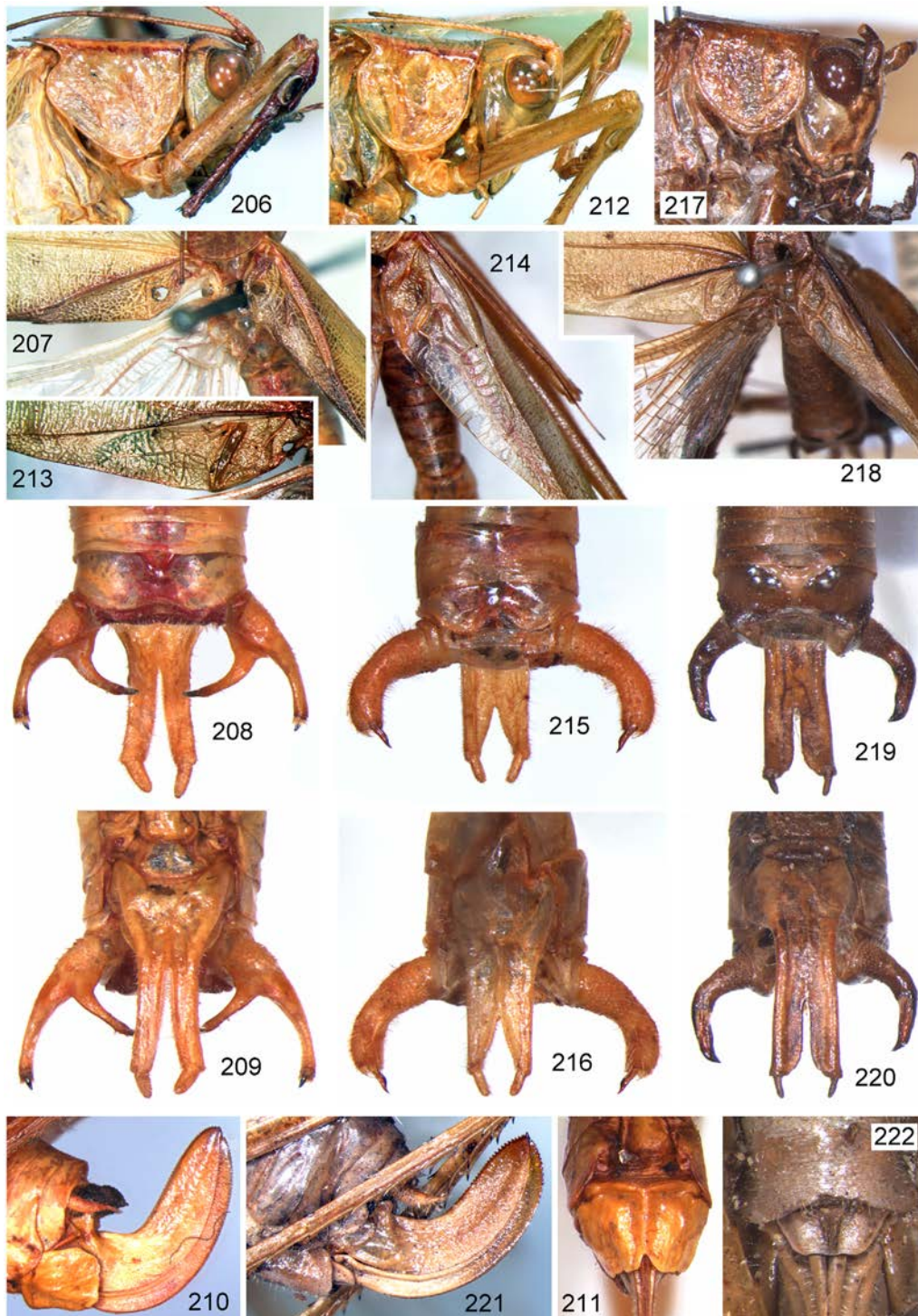
***Abrodiaeta (Barodiaeta) minasgerais* sp. nov.**

(Figs 139–142, 151–155, 254)

Etymology. This species is named after the Minas Gerais State of Brazil where it was collected.

Type material. *Holotype* – male, BRAZIL: Minas Gerais State [“Minas Geraës”], 1897, “ex coll. Fruhstorfer”, “104-98”.

Description. *Male* (holotype). General appearance more or less similar to that of *A. (S.) propinqua* sp. nov. and *A. (S.) fruhstorferi* sp. nov. However, following characteristic features developed: body colouration with dense redish dots on pronotum, six short and narrow whitish longitudinal stripes on pronotal disc along its lateral edges, dorsal tegminal field coloured as in *A. (S.) fruhstorferi* sp. nov., rest tegminal part having yellowish anal border and one row of blackish cells near it as well as blackish line along proximal third of lateral edge of dorsal field; upper tubercle of head rostrum slightly shorter than in these congeners (barely projected before lower tubercle); pronotum slightly lower than in these species and with barely concave anterior half of ventral edge of each lateral lobe (Fig. 139); tegmina almost as in *A. (S.) fruhstorferi* sp. nov. in shape but with costal area having cellular venation and one longitudinal pseudovein, with RS distinctly longer and having more parallel branches and narrower area between



Figs 206–222. *Theudoria* Stål: 206–211 – *Th. (Ctenophorema) pyrrocnemis* *surinam* subsp. nov.; 212–216 – *Th. (Homotoicha) diversa* (Br.-W.) from Brazil (Minas Gerais); 217–222 – *Th. (Theudoria) melanocnemis* Stål from Uruguay (Montevideo). Head with pronotum from side (206, 212, 217); male stridulatory apparatus of both tegmina (207, 218), of left tegmen (213) and of right tegmen (214); male abdominal apex from above (208, 215, 219) and from below (209, 216, 220); ovipositor from side (210, 221); female genital plate from below (211, 222).

them (Fig. 140), and with stridulatory apparatus as in Figs 140 and 141; structure of hind wings as in Fig. 142; last abdominal tergite as in *A. (S.) propinqua* sp. nov. but without any posteromedian lobe (Fig. 151); epiproct located behind this tergite, rather large, almost triangularly oval (with narrowly rounded apex), and directed downwards; cerci somewhat longer, having three branches on each cercus and almost concave medial surface between these three branches (lateral branch longest, curved medially in distal half and having characteristic small dorsal projection near middle of its length; dorsomedial branch spine-like, directed upwards/medially, and located near base of cercus; ventromedial branch shortest, almost finger-like, directed downwards/medially, and located also not far from cercal base; Figs 151–153, 254); genital plate distinctly shorter than in *A. (S.) propinqua* sp. nov. and *A. (S.) fruhstorferi* sp. nov. but more or less similar to that of these congeners in general shape (Figs 152, 153); genitalia with unpaired and asymmetrical sclerite very small and lacking teeth (Figs 154, 155).

Female unknown.

Length (mm). Body 20.5; body with wings 38.0; pronotum 4.8; tegmina 29.0; hind femora 19.0.

Comparison. The new species is similar to *A. (A.) lanceolata* and *A. (A.) macricula* sp. nov. in the general appearance, long tegminal RS and characteristic structure of Sc branches, but it is distinguished from these species as well as from *A. (S.) propinqua* sp. nov. and *A. (S.) fruhstorferi* sp. nov. by the absence of any posteromedian lobe on the male last tergite posterior edge, and from the two latter congeners, by the unpaired sclerite of male genitalia much smaller.

Genus *Rostellula* gen. nov.

Type species: *Rostellula minutissima* sp. nov., designated here.

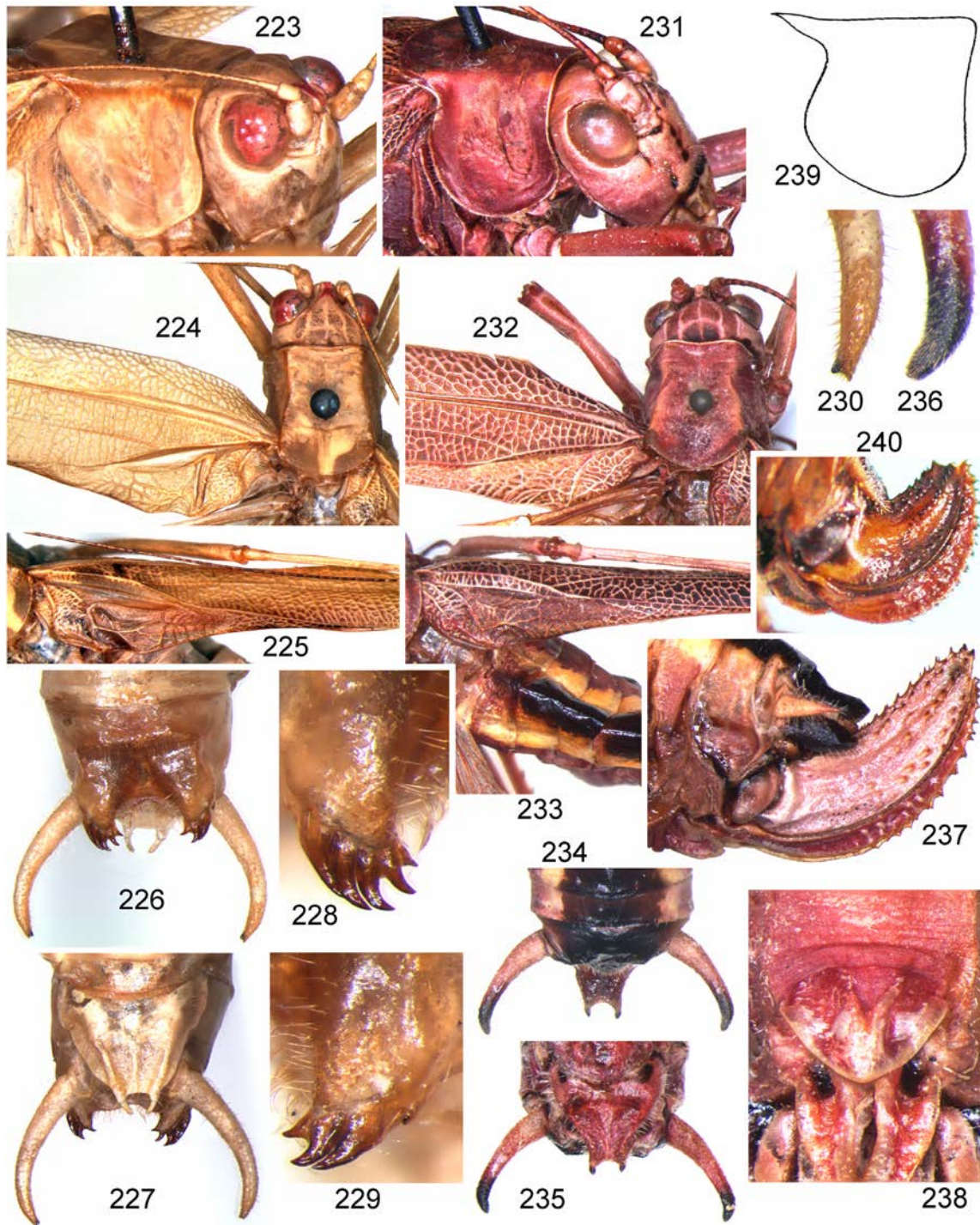
Etymology. This generic name originates from the Latin word “rostellum” (small rostrum, small nose) in connection with a characteristic structure of the upper rostral tubercle.

Diagnosis. Body small or very small. Upper rostral tubercle (Figs 157, 166) clearly projected forwards (before lower rostral tubercle) and somewhat upwards (these tubercles separated from each other by some space, i.e. apex of lower tubercle distinctly not in contact with upper tubercle), with apical part narrow and roundly truncate as well as ventrally

convex (slightly thickened in profile), and with dorsal surface having one distinct median (longitudinal) groove and a pair of small but distinct convexities (partly fused with each other) at base of this tubercle (near lateral ocelli); lower rostral tubercle slightly narrower in apical part and somewhat shorter than upper one; anterior surface of head slightly or distinctly oblique in profile (Figs 156, 165). Pronotum moderately long and narrow, with anterior and lateral edges of disc almost straight, with posterior edge of disc roundly truncate, and with lateral lobe having more or less oblique anterior and anteroventral edges as well as round rest of this lobe (however, this lobe also with rather diverse humeral notch; Figs 156 and 165). Wings long (hind wings somewhat protruding beyond tegminal apices); tegmina narrow, with almost parallel costal and anal edges (Figs 159, 168), with long RS (this vein single-branched or having rather long general proximal stock and 2–3 branches in distal part), with single-branched or almost single-branched RA, and with stridulatory apparatus typical of *Anaulacomerina* (Figs 158, 159, 167, 168). Legs also typical of this subtribe but with all femora lacking spines, spinules or denticles (except for hind femur having a pair of small apical denticles), with hind femur more or less narrow in proximal half, and with sparse spinules on ventral surface of fore and middle tibiae as well as more numerous small spines on all four keels of hind tibia. Last tergite clearly longer than other abdominal tergites; this tergite with very short and wide posterior lobe directed backwards and having almost straight (truncate) posterior edge, or almost without such lobe and having posteromedian edge widely and shallowly concave; epiproct moderately small, elongate and rounded at apex; paraprocts smaller (shorter) and also rounded; cerci not very long and more or less simple in shape (Figs 161–163, 170–172); genital plate rather short, with slightly narrowed distal part having not very deep posteromedian notch and a pair of small posterolateral lobules (styles undeveloped; Figs 161, 163, 170, 172); genitalia completely membranous and rather compact (Fig. 164).

Included species. Type species and *R. santacruzii* sp. nov.

Comparison. The new genus differs from the other genera of *Anaulacomerina* in the characteristic shape of upper rostral tubercle and simple structure of male abdominal apex (last tergite lacks large processes or lobes, epiproct is small and very simple in



Figs 223–240. *Ligocatinus* Rehn and *Enthepippion* Bruner: 223–230 – *L. paraguay* sp. nov.; 231–238 – *E. borelli* (Giglio-Tos); 239 – *E. minutum* (Rehn); 240 – *E. olivaceum* (Br.-W.). Head with pronotum from side/above and slightly in front (223, 231); head with pronotum and stridulatory apparatus of left tegmen from above, male (224, 232); stridulatory apparatus of right male tegmen (225, 233); male abdominal apex from above (226, 234) and from below (227, 235); left (228) and right (229) posterior lobes of male last tergite from above and slightly from side/behind; distal part of male right cercus from above (230, 236); ovipositor from side (237, 240); pronotum from side (239). [239 – after Rehn (1921), modified].

shape, cerci are moderately short and not strongly specialized, genital plate is also rather short, and genitalia are without sclerotized parts).

***Rostellula minutissima* sp. nov.**
(Figs 112, 165–172)

Etymology. The name of this species is the Latin word “minutissima” (very small, smallest) in connection with its body size.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov.

Description. *Male* (holotype). Body very small and slender. Colouration yellowish with greenish tinge on tegmina (colouration completely greenish in living condition) and following marks: head with three whitish longitudinal lines on dorsum (median line and a pair of lines behind eyes), two pairs of greyish rose narrow longitudinal stripes between these lines and on lateral surfaces of head along (under) lateral whitish lines, and light brown lateral borders of dorsum of upper rostral tubercle; pronotum with numerous rose dots; tegmina with light brown stripe along anal edge of most part of lateral field as well as with three brown spots and some semimembranous areas in dorsal field (but right tegmen having two distal spots of them poorly visible, i. e. almost indistinct); hind wings transparent; cercal apices somewhat darkened (Figs 165–172). Upper rostral tubercle very narrow (scape almost three times as wide as distal part of this tubercle), slightly not reaching apices of scapes (Fig. 166); pronotum narrow and low, clearly elongate in profile, with oblique anterior edges of lateral lobes, with insignificantly oblique ventral edges, with roundly angular posteroventral corners as well as with shallow and rather widely rounded humeral notches (Fig. 165); tegmina with single RS having its basal part almost lost, with additional longitudinal vein running from proximal part of median area to RS and after small interval along median line of interradiar area, and with mirror moderately long (Figs 112, 167, 168); hind wing as in Fig. 169; last tergite somewhat longer than previous abdominal tergites and with slightly concave posterior edge; epiproct narrowly elongate and with rounded apex, directed downwards; cercus with moderately

large medial tooth which shorter than lateral cercal branch and having almost spinule-like apical part (Figs 170–172); genital plate almost square but with rather large angular posteromedian notch (Fig. 170).

Female unknown.

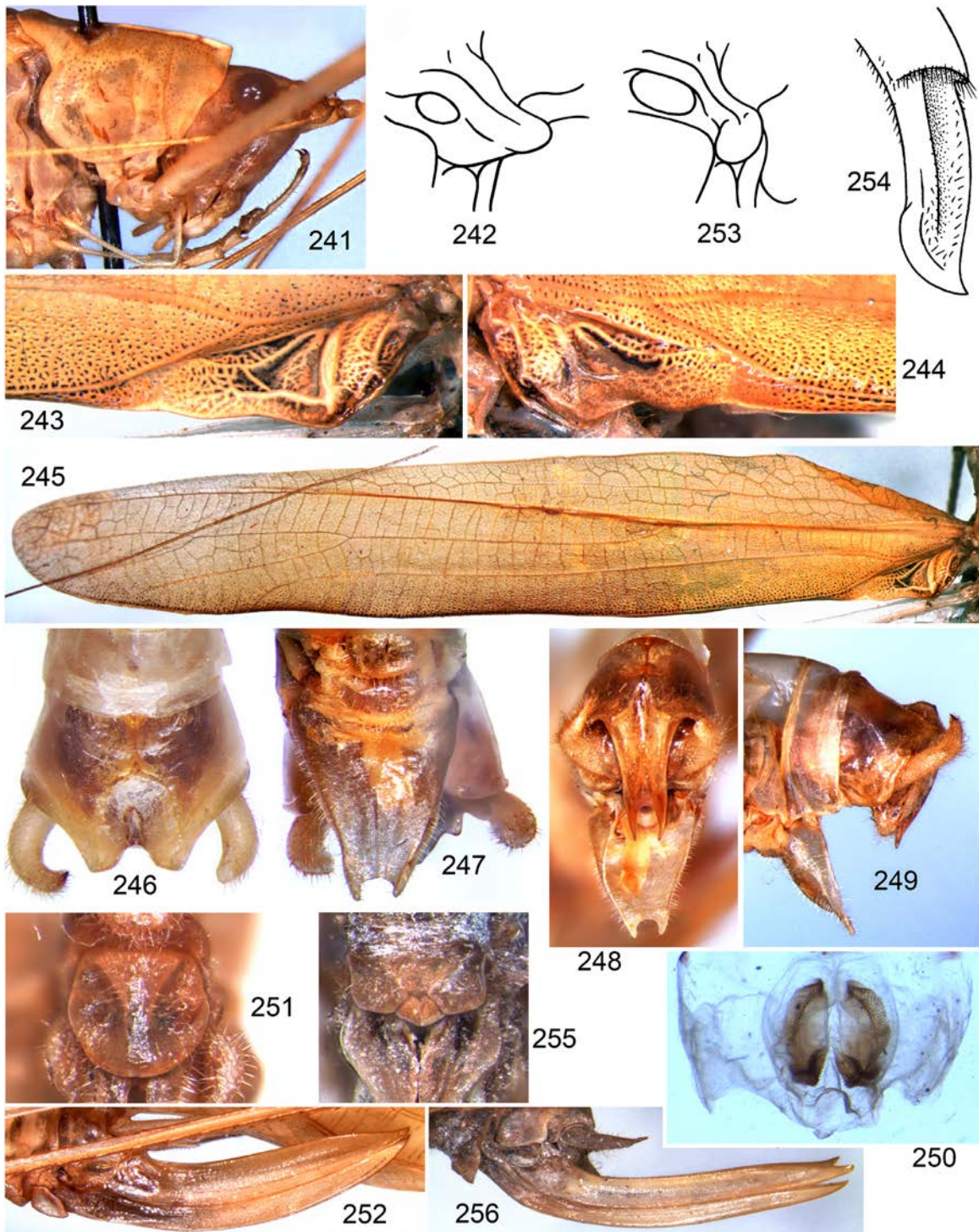
Length (mm). Body 10.0; body with wings 22.5; pronotum 2.8; tegmina 19.5; hind femora 11.5.

***Rostellula santacruzii* sp. nov.**
(Figs 111, 156–164, 255, 256)

Etymology. This species is named after the Santa Cruz Department of Bolivia where it was collected.

Type material. *Holotype* – male, BOLIVIA: Santa Cruz Department, Noel Kempff Mercado National Park (near border with Brazil), Los Fierros Camp, ~300 m, primary forest, at leaf of small tree at night, 23–28 January 2014, A. Gorochov. *Paratypes*: 2 females, same data as for holotype.

Description. *Male* (holotype). General appearance more or less as in *R. minutissima* sp. nov. but with following differences: body somewhat larger; colouration completely yellowish with barely darker (i.e. having greyish tinge) head dorsum and pronotal disc, one whitish median line on dorsum of head, rose other dorsal parts of upper rostral tubercle as well as dots on dorsal part of scape and on most part of pronotum (pronotal disc with a pair of longitudinal rows from dense dots near median line in anterior half of pronotum), as well as one brown spot at base of dorsal tegminal field and without any darkish stripe in lateral tegminal field (Figs 156–163); upper rostral tubercle (Fig. 157) slightly wider than in *R. minutissima* sp. nov. (scape approximately two times as wide as distal part of this tubercle); pronotum with slightly higher (but also elongate) lateral lobes having widely rounded (almost obliquely truncate) posteroventral corners as well as deeper and narrower (angular) humeral notches (Fig. 156); tegmina with two branches in posterior half of normal RS, without additional longitudinal vein and with mirror somewhat shorter than in *R. minutissima* sp. nov. (Figs 111, 158, 159); hind wing with somewhat longer thickened distal portion of costal part (Fig. 160); last abdominal tergite with short and wide posteromedian lobe having truncate posterior edge; cercus without tooth but arcuately curved in distal half as well as having thin and acute apical part (Figs 161–163); genital plate with distal part somewhat narrowing to apex having shallowly and widely trapezoidal posteromedian



Figs 241–256. *Abrodiaeta* Br.-W. and *Rostellula* gen. nov.: 241–252 – *A. (Abrodiaeta) macricula* sp. nov.; 253 – *A. (Sclerodiaeta) fruhstorferi* sp. nov.; 254 – *A. (Barodiaeta) minasgerais* sp. nov.; 255, 256 – *R. santacruzii* sp. nov. Head with pronotum from side (241); rostrum of head from above/side and slightly in front (242, 253); stridulatory apparatus of left (243) and right (244) male tegmina; left male tegmen (245); male abdominal apex from above (246), from below (247), from behind (248) and from side (249); male genitalia from above (250); female genital plate from below (251, 255); ovipositor from side (252, 256); distal part of male left cercus from above (254).

notch as well as a pair of small angular projections around this notch (Fig. 161).

Female. External structure and colouration of body similar to those of male; however, rose dots on head and pronotum less distinct or indistinct, dorsal tegminal field with finely cellular yellowish venation and numerous slightly darker (yellowish grey) small membranes in cells, and abdominal apex with simple (typical of *Anaulacomerina* females) tergites and fusiform cerci (their apical parts barely curved upwards) as well as small triangular epiproct having rounded apex. Genital plate also small and transverse but with very small and almost obtuse-angled posteromedian projection separated from rest part of this plate by very narrow, arcuate and partly membranous groove (Fig. 255); ovipositor not long, almost straight in middle and distal parts, and without denticles (Fig. 256).

Length (mm). Body: male 16.5, female 17.0–17.5; body with wings: male 27.0, female 32.0–33.0; pronotum: male 3.7, female 3.7–3.9; tegmina: male 23.0, female 23.0–24.0; hind femora: male 16.0, female 17.5–18.0; ovipositor 6.5–7.0.

Comparison. The new species differs from *R. minutissima* sp. nov. in the characters listed above. This species is not very related to the type species and may belong to a different subgenus of *Rostellula*.

Genus *Separatula* gen. nov.

Type species: *Separatula adunca* sp. nov., designated here.

Etymology. Name of this genus originates from the Latin word “separatus” (separate) in connection with its clear differences from the other *Anaulacomerina* genera.

Diagnosis. Body small. Upper rostral tubercle of head narrow but barely widened in apical part (Figs 173, 174, 179, 180), distinctly shorter than in *Rostellula* gen. nov. (apex of this tubercle slightly not reaching anterior surface of lower rostral tubercle but in contact with apex of latter tubercle), with small dorsoapical inflation in profile (Figs 174, 175, 180, 181) and longitudinal (median) groove on dorsum (this groove similar to that of above-mentioned genus); lower rostral tubercle clearly wider than upper one (Figs 173, 179), anteriorly flattened (Figs 174, 175, 180, 181). Pronotum with disc similar to that of *Rostellula* gen. nov. (Figs 174, 180), but its lateral lobes approximately as long as high, with somewhat

concave anterior edges and almost round ventral, posteroventral and posterior parts, and with rather deep and narrow (angular) humeral notches (Figs 175, 181). Wings long; hind wings distinctly protruding beyond tegminal apices; tegmina narrow, with almost parallel costal and anal edges, with two distal branches on RA, with normal RS having two branches in distal half, and with male stridulatory apparatus typical of *Anaulacomerina* (Figs 109, 177, 178, 182). Legs also similar to those of *Rostellula* gen. nov. but with a few small denticles on inner ventral keel of fore femur and with clearly widened (thickened) proximal half of hind femur. Last tergite almost as nearest abdominal tergites in size, with truncate hind part having almost straight or barely concave posterior edge; male epiproct elongate but narrow, having rounded apex and dorsomedian longitudinal groove, located between cercal bases, directed downwards, and clearly separated from last tergite by distinct membranous area (this area light and situated also between this tergite and cercal bases; Figs 183, 185, 189, 191); male paraprocts very small and almost finger-like, located near apex of epiproct; male cercus moderately short, having dorsoproximal part inflated and almost articulated with rest part (this dorsoproximal part strongly darkened and sometimes with large process), and latter part with distal portion acute and curved more or less upwards and medially (Figs 183–185, 189–191); male genital plate short, distinctly or slightly narrowed in apical part as well as with wide and shallow posteromedian notch and thin or small lobules around it (Figs 184, 185, 190, 191); female genital plate also short and with almost truncate posterior part having more or less small posteromedian notch and membranous lobule behind this notch (Figs 187, 193). Male genitalia membranous but characteristic in shape: with a pair of large distal lobes widely truncated at apex, and with smaller and narrow median lobule (Figs 186, 192). Ovipositor short and rather high, curved upwards, and with very small denticles along dorsal and ventral edges only (Figs 188, 194).

Included species. Type species; *Anaulacomera falcata* Giglio-Tos, 1898; *A. wilsoni* Cadena-Castañeda, 2015.

Comparison. The new genus is most similar to the genus *Phaneropteroides* in the characteristic shape of its rostral tubercles, but it is clearly distinguished from the latter genus by the male last abdominal tergite lacking any large posterodorsal lobe

protruding beyond cercal bases, and male cerci much shorter and stronger. *Separatula* gen. nov. is also in accordance to the “Grupo Falcata” included in the genus *Anaulacomera* by Cadena-Castañeda (2015b), but the new genus distinctly differs from majority of *Anaulacomera* congeners as well as from all the other genera of Anaulacomerina in the following combination of characters: lower tubercle is clearly wider than upper one (*vs.* lower tubercle is not wider than upper tubercle); male has a characteristic membranous area between last tergite and epiproct as well as between this tergite and cercal bases; male cercus is with an inflated dorsoproximal part which is almost articulated with rest of cercus; male and female genital plates are short; female genital plate has almost truncate posterior part and unpaired membranous lobule located behind this part.

***Separatula adunca* sp. nov.**

(Figs 173–178, 183–188)

Eymology. Name of this species is the Latin word “adunca” (hooked) in connection with its male cercal shape.

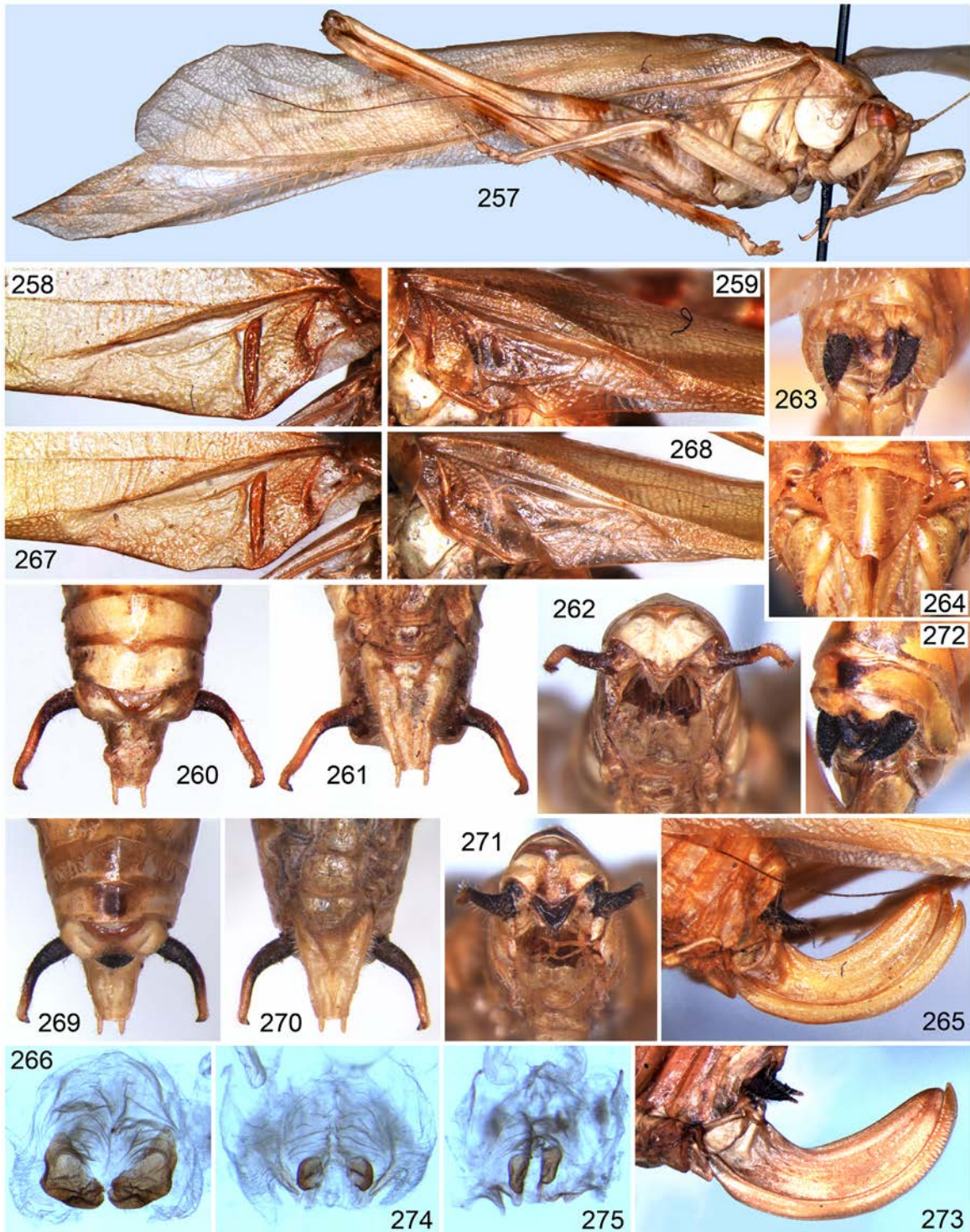
Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, at light, 5–9 December 2017, A. Gorochoy, G. Irisov. *Paratypes*: 2 males, same data but 20–23 October 2008, A. Gorochoy, M. Berezin, L. Anisytukin, E. Tkatsheva, V. Izersky; 1 male, same province, ~18 km N of Satipo Town, environs of waterfall Sinco Cascadas near Paratushali Vill., ~800 m, forest near small river, at light, 4–5 November 2008, A. Gorochoy, M. Berezin, L. Anisytukin, E. Tkatsheva, V. Izersky; 2 males, same province, 12 km N of Satipo Town, “Concesion de Conservacion de la Universitaria”, 11.2031563°S, 74.6194062°W, ~600 m, primary/secondary forest, at light, 25–27 November 2017, A. Gorochoy, G. Irisov; 1 male, same province, Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochoy, G. Irisov; 1 female, ECUADOR, ~70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying primary forest, 10–17 November 2005, A. Gorochoy, A. Ovtshinnikov.

Description. *Male* (holotype). Colouration of body yellowish with greyish tinge and following

marks: head dorsum with large triangular greyish brown area reaching apex of upper rostral tubercle and having whitish longitudinal (median) line; rest of epicranium and clypeus with numerous rose dots (these dots forming five vertical bands: one median band under rostral apex, a pair of medial ones under antennal cavities, and a pair of lateral bands along posterior edges of genae; Figs 173–175); antenna light yellowish grey with brown and light brown marks on scape; pronotum with greyish brown disc having median whitish line and a pair of light stripes along lateral edges, and with yellowish lateral lobes fused with latter stripes and having numerous rose dots (Figs 174, 175); tegmina light yellowish grey with semitransparent cell membranes, several small brown spots on lateral field, and slightly darkened some parts in dorsal field (Figs 177, 178); hind wings transparent with brownish venation and with distal portion of costal part as in Fig. 176; legs with numerous brown, light brown and rose small spots and dots; rest of body yellowish grey with rose marks and dots on thoracic sternites, pleurites and majority of abdominal tergites, with light brown last tergite and most part of cercus, with brown proximal and distal areas on cercus, and with almost whitish abdominal sternites and genital plate (Figs 183–185). Structure of head, pronotum and wings as in Figs 173–178; tegminal stridulatory apparatus as in Figs 177, 178; dorsoproximal part of cercus without process (Figs 183, 185); rest of cercus short and rather thick, with distal half almost angularly curved upwards and characteristically arcuate from behind (medial edges of cercal distal part with distinct but low dark arcuate keels) (Figs 183, 185); genital plate with distinctly narrowed apical part having a pair of long and thin posterior lobules which almost spine-like and arcuately directed aside (Fig. 184); genitalia completely membranous (Fig. 186).

Variation. Body colouration sometimes slightly lighter and less spotted.

Female. General appearance as in light male, but: tegminal stridulatory apparatus undeveloped; membranous area between last tergite and epiproct (and between this tergite and cercal bases) also undeveloped; cerci smaller and less specialized but with dorsoproximal convexity on each cercus having one small denticle directed backwards/upwards; genital plate slightly longer than its width, without additional lateral convexities in middle part and with very small posteromedian notch (Fig. 187); eighth ab-



Figs 257–275. *Ceraiella* Heb.: 257–266 – *C. zebrina pudica* subsp. nov.; 267–275 – *C. ?triannulata* Heb. Male body from side (257); stridulatory apparatus of left (258, 267) and right (259, 268) male tegmina; male abdominal apex from above (260, 269), from below (261, 270) and from behind (262, 271); female abdominal apex from more or less behind (263, 272); female genital plate from below (264); ovipositor from side (265, 273); male genitalia from above (266, 274, 275).

dominal tergite with posteroventral corners elongate and directed backwards/downwards (outer surfaces of each this corner dark and shallowly concave as well as with small curved whitish tubercle near apex of this corner; Fig. 188); ovipositor as in Fig. 188.

Length (mm). Body: male 12.5–14.0, female 13.0; body with wings: male 26.0–28.0, female 28.0; pronotum: male 2.6–2.9, female 2.8; tegmina: male 19.0–22.0, female 23.0; hind femora: male 13.5–14.0, female 16.0; ovipositor 5.0.

Comparison. The new species differs from *S. falcata* and *S. wilsoni* in the structure of male cercus lacking any hook-like or spine-like process on its dorsoproximal part.

Tribe ?Scudderiini Brunner-Wattenwyl, 1878

Remarks. In this tribe, several more or less related genera were included (Cadena-Castañeda 2015a). These genera are mainly characterized by a few primitive characters: head rostrum is rather narrow and divided into two simple and small tubercles (more or less as in *Anaulacomerina*); tegmina are rather narrow and with normal structure of the both RS vein and area between branches of MP+CuA1, as well as with the proxilateral corner of male mirror not very narrowed (Figs 122, 123); tympana are completely opened, oval; styles of male genital plate are articulated with this plate but not fused with it. However, these styles are absent in the genus *Scudderia* Stål, 1873 (type genus of this tribe). Thus, the Scudderiini sensu Cadena-Castañeda is here used only as a problematic tribe which is in need of clarification of its composition and systematic position.

Aganacris sphex (Rehn, 1918) (Figs 195–199)

Material studied. FRENCH GUIANA: 2 males, “Guyane Fr., 5–15 km W Saül, 3°38'N 53°14'–17'W, 250–300 m, Gussarov, 26–27 July 1995”.

Remarks. This species was described from the Para State of Brazil located near Surinam and French Guiana. Later it was synonymized with *Scaphura nitida* Perty, 1832, *A. micans* Walker, 1871 and *A. pseudosphex* Grant, 1958 (Nickle 2012), but recently it was restored as a separate species (Sovano et al. 2018). I have possibility to compare the above-mentioned males with my numerous specimens from Peru and Bolivia, and I support the latter opinion be-

cause Peruvian and Bolivian males differ from those of *A. sphex* in the following characters: their tegmina have a somewhat longer mirror (for comparison see Figs 195, 196 and 200, 201), smaller dark apical spot and distinct (thickened and darkened) crossvein between RS proximal part and MP+CuA1 (this crossvein is absent in *A. sphex*; see Figs 195 and 200); hind wings are with a shorter dark subapical spot; genital plate is with the posterolateral lobules larger, widened in the apical part and somewhat curved medially, as well as with posteromedian notch having almost transversally straight or angularly convex (but not roundly concave) anterior edge (see Figs 197, 199 and 202, 204, 205); male genitalia have a clearly visible semisclerotized medial area (*vs.* almost without such area; see Figs 198 and 203).

Also it is useful to note that *A. nitida* was described for one female from another zoogeographical region (Southeast Brazil: Minas Gerais State), but *A. micans* and *A. pseudosphex*, from Western South America (Amazon Region and Peru, respectively); the two latter names probably belong to my Peruvian-Bolivian species, but *A. nitida* may be a separate species or subspecies and is in need of an additional study.

Genus *Theudoria* Stål, 1874

Note. According OSF, this genus contains three species and three species synonyms. These species are morphologically very similar to those of *Homotoicha* Brunner-Wattenwyl, 1891 which is considered in this site as a separate genus with four generic synonyms, 12 species and nine species synonyms. Moreover, the two species of *Theudoria* sensu OSF are more similar in their main characters to some species of *Homotoicha* sensu OSF than to *Theudoria* type species. Some of the other species, included in this site in *Homotoicha*, clearly belong to different genera (see notes about *Ligocatinus* Rehn, 1901, gen. dist., *Enthephippion* Bruner, 1915 and *Euthyrrhachis* Brunner-Wattenwyl, 1878 below).

But majority of the species, included in *Theudoria* and *Homotoicha* in OSF, belongs to the same genus which is characterized by the similar structure of head, tegmina, legs, abdominal tergites and sternites, epiproct, paraprocts, and especially male genital plate (Figs 208, 209, 215, 216, 219, 220). This plate is rather long and narrow in the distal half, and with a deep and narrow posteromedian notch as well as a

pair of distinct elongate styles in the apical part. The male genitalia and ovipositor are also very similar in these species: genitalia are completely membranous, and ovipositor is moderately short and with very small denticles on its dorsal and ventral edges only (Figs 210, 221). This genus is here divided into three subgenera (see a key to subgenera of the genus *Theudoria* below).

1. Pronotum rather long, with obliquely truncated posteroventral part of each lateral lobe as well as with rather deep and narrow each humeral notch (Fig. 206); male cercus usually with two rather long branches diverged in its proximal half (Figs 208, 209)..... subgenus ***Ctenophorema*** Piza, 1967, stat. nov. (= *Polyurena* Piza, 1967, syn. nov.) [Composition (in original binomen): *C. balneare* Piza, 1967 – type species of *Ctenophorema* (Brazil: state Minas Gerais); *Homotoicha laminata* Brunner-Wattenwyl, 1891 (Brazil: state Rio Grande do Sul), synonymized with previous species by Cadena-Castañeda (2015a); *Scudderia bivittata* Piza, 1976 (Brazil: state São Paulo), synonymized with *Th. laminata* by Cadena-Castañeda (2015a), but this synonymy is erroneous because their females have very different genital plates (small in *Th. laminata*, very large in *Th. bivittata*); *P. hexacercata* Piza, 1967 – type species of *Polyurena* (Brazil: state Minas Gerais); *Homotoicha fuscopunctata* Caudell, 1906 (Paraguay), synonymized with latter species by Cadena-Castañeda (2015a); *Theudoria pyr-rhocnemis* Brunner-Wattenwyl, 1878 (Brazil: state Bahia); *Homotoicha precaria* Piza, 1950 (Brazil: state São Paulo), synonymized with *Th. pyr-rhocnemis* by Cadena-Castañeda (2015a); *Theudoria jahyrae* Piza, 1977 (Brazil: state Goiás); possibly *Homotoicha orlando* Cadena-Castañeda, 2015 (Colombia).]
- Pronotum rather short; its lateral lobe more or less as long as high, having more rounded posteroventral part and rather diverse humeral notch (Fig. 212, 217); male cercus unbranched (Figs 215, 216, 219, 220) or with two short branches diverged in its distal half..... 2
2. Pronotum with moderately shallow humeral notches (Fig. 217); male cercus unbranched and with large hook at distal part (Figs 219, 220)..... subgenus ***Theudoria*** s. str. (= *Hebardius* Piza, 1980) [Composition (in original binomen): *Phanoptera melanocnemis* Stål, 1861 – type species of *Theudoria* (Argentina: Buenos Aires) (Figs 217–222); *Hebardius rubrovittatus* Piza, 1980 – type species of *Hebardius* (Brazil: state São Paulo), synonymized with previous species by Cadena-Castañeda (2015a); possibly *Theudoria nigrolineata* Brunner-Wattenwyl, 1891 (Argentina: Buenos Aires), erroneously synonymized with *Th. pyr-rhocnemis* by Cadena-Castañeda (2015a) but possibly synonym of *Th. melanocnemis*.]

- Pronotum with moderately deep humeral notches (Fig. 212); male cercus unbranched and without large hook at distal part (Figs 215, 216), or this cercus with two short distal branches..... subgenus ***Homotoicha*** Brunner-Wattenwyl, 1891, stat. nov. [Composition (in original binomen): *H. diversa* Brunner-Wattenwyl, 1891 – type species of *Homotoicha* (Brazil: state Santa Catharina) (Figs 212–216); *Ceraia similis* Caudell, 1906 (Paraguay); *Turpilia paraguayensis* Rehn, 1907 (Paraguay), synonymized with *Th. similis* by Hebard (1927); *Theudoria catalao* Piza, 1977 (Brazil: state Goiás), synonymized with *Th. similis* by Cadena-Castañeda (2015a); *C. tresmariae* Piza, 1980 (Brazil: state Mato Grosso), synonymized with *Th. similis* by Cadena-Castañeda (2015a); possibly *Scudderia minor* Brunner-Wattenwyl, 1878 (Brazil) and *H. subdistincta* Brunner-Wattenwyl, 1891 (Venezuela).]

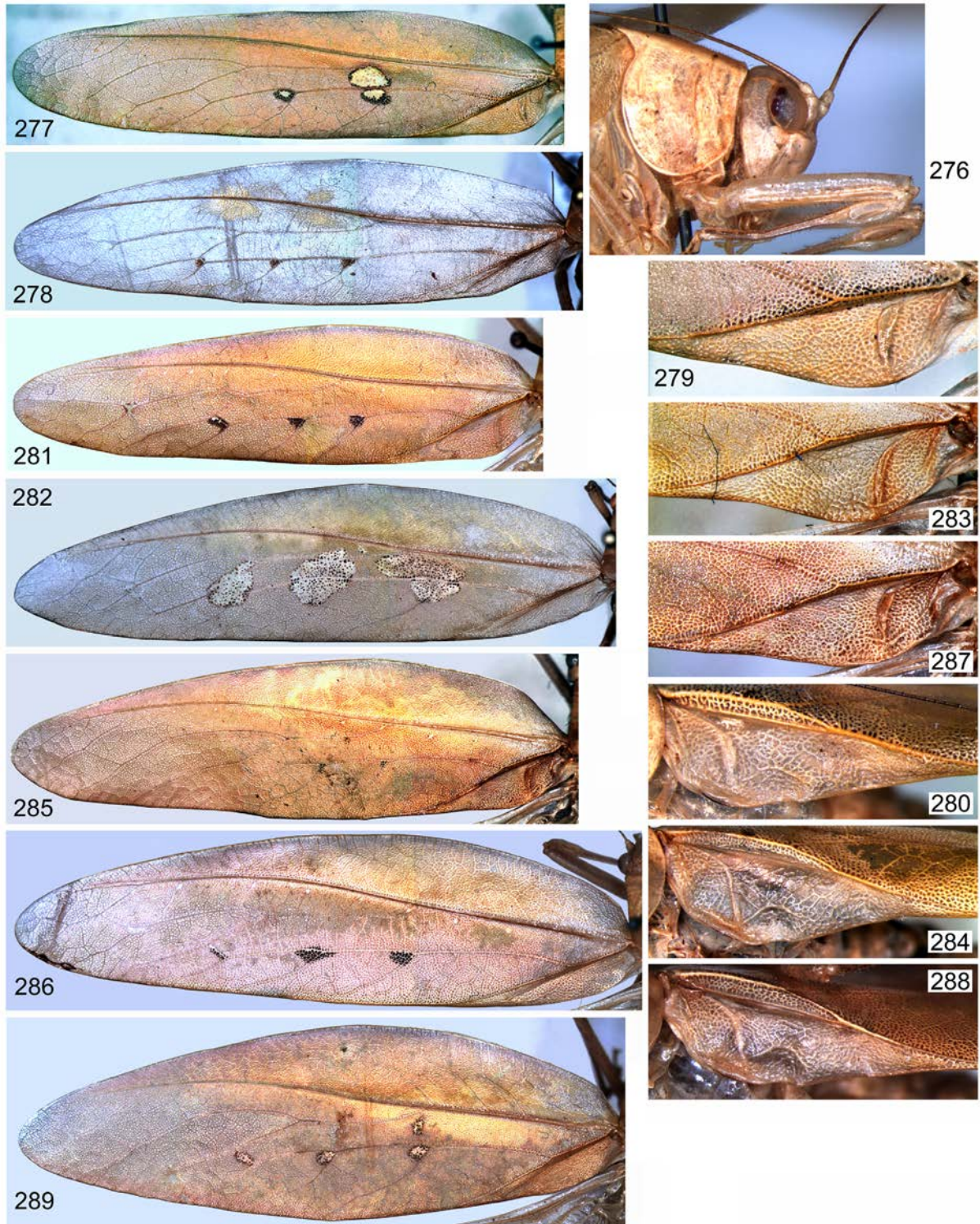
It is necessary to indicate that the type species of *Homotoicha* and *Theudoria* have a very characteristic feature in the structure of their male cercus: the truncated cercal apex in *Th. (H.) diversa* comb. nov. is with a round concavity bordered by long setae and having one spine near its dorsal edge (Fig. 127); in *Th. (Th.) melanocnemis*, this spine is modified into a much larger hook, and the above-mentioned concavity bordered by setae is located at the base of this hook on the ventral cercal surface (Fig. 126). Moreover, a similar structure (round apical concavity of lateral cercal branch bordered by setae but with central position of spine) is developed in the male cercus of *Th. (C.) pyr-rhocnemis* (Fig. 128) which is very similar to the type species of *Ctenophorema* in the shape of its pronotal lateral lobe. This character additionally supports inclusion of these subgenera in one genus.

***Theudoria (Ctenophorema) pyr-rhocnemis surinam* subsp. nov.**
(Figs 128, 206–211)

Etymology. This subspecies is named after its type locality.

Type material. *Holotype* – male, SURINAM: “Surinam ex coll. Fruhstorfer”, “N 130-97”. *Paratypes*: 2 males, 6 females, same data as for holotype, but 2 females determined as “*Homotoicha laminata*” and 1 female – as “*Homotoicha* n. spec. vic. *laminata* Br.”.

Description. *Male* (holotype). General appearance very similar to that of nominotypical subspecies. Colouration (Figs 206–209) yellowish, but: head dorsum and pronotal disc light brown with a



Figs 276–289. *Parableta* Br.-W.: 276–280 – *P. (Parableta) cercata* sp. nov.; 281–284 – *P. (P.) nikolaii* sp. nov.; 285–288 – *P. (P.) ?boliviana* Bruner; 289 – *P. (?P.) denticulata* sp. nov. Head with pronotum from side (276); male (277, 281, 285) and female (278, 282, 286, 289) left tegmina; stridulatory apparatus of left (279, 283, 287) and right (280, 284, 288) male tegmina.

pair of almost whitish longitudinal stripes running from lateral parts of upper rostral tubercle to almost lateral edges of pronotal disc; each lateral pronotal lobe with reddish brown stripe along dorsal edge and with yellowish longitudinal stripe between previous stripe and pronotal disc; each tegmen with greenish tinge on most part of lateral field, greyish brown stripe along border between lateral and dorsal fields, and darkened membranes in cells of dorsal field (such membranes numerous in left tegmen and sparse in right one) and in cells of lateral field located along its anal edge; legs with greenish tinge on femora, reddish brown fore tibia as well as light brown middle and hind tibiae; abdomen with rose rather wide median (longitudinal) stripe as well as membranous and semimembranous areas between last tergite and bases of both epiproct and cerci. Head typical of this genus, with apices of rostral tubercles narrow and closely located (not projected before each other), and with face barely oblique; pronotum moderately narrow and slightly narrowing to head, with lateral lobes clearly delimited from disc (their shape as in Fig. 206); tegmina rather narrow and long but slightly shorter than hind wings, with normal RS having two branches in distal half, and with stridulatory apparatus as in Figs 207; last tergite slightly longer than previous abdominal tergites, with very short and wide semimembranous posteromedian lobe directed downwards and almost truncated posteriorly; epiproct more or less oval, practically unspecialized; each cercus with two long and rather thin branches (lateral branch directed more or less backwards, with barely thickened distal part and with apex as in Fig. 128; medial branch arcuate, curved medially, with apex almost acute; Fig. 208); genital plate long, with distal half somewhat narrowed but having deep and narrow posteromedian notch which almost equal to half of this plate in length, and with moderately small but elongate styles (Fig. 209).

Variations. Some paratypes with hind femora completely light brown.

Female. Colouration and external structure of body as in males, but dorsal tegminal field with finely cellular venation and coloured as that of left tegmen in male; genital plate large (wide), laterally covering most part of ovipositor base, with slightly sinuate (almost straight) posterior edge of each lateral lobe of this plate, and with comparatively small and narrow notch between these lobes (Figs 210, 211); ovipositor as in Fig. 210.

Length (mm). Body: male 19.0–21.0, female 20.0–24.0; body with wings: male 35.0–38.0, female 39.0–43.0; pronotum: male 4.8–5.0, female 5.0–5.3; tegmina: male 26.0–28.0, female 28.0–30.0; hind femora: male 23.0–25.0, female 24.0–27.0; ovipositor 4.9–5.1.

Comparison. This subspecies is distinguished from nominotypical one by the lateral branch of male cercus distinctly thinner in subapical part. Also, this character probably distinguishes the new subspecies from *Th. (C.) jahyrae* and *Th. (C.) precaria* which may be synonyms of *Th. (C.) p. pyrrocnemis* distributed in southern half of Brazil. From *Th. (C.) fuscopunctata* and *Th. (C.) bivittata* distributed in the same region and near it (also possible synonyms of *Th. p. pyrrocnemis*), the new subspecies differs in the female genital plate lacking distinct posterior notch on each lateral part in profile. From *Th. (C.) laminata*, *Th. (C.) hexacercata*, *Th. (C.) balnearis* and *Th. (C.?) orlandoi*, the new subspecies is clearly distinguished by the posteromedian notch of male genital plate deeper; additionally from the three first species, by the male cercal lateral branch not curved upwards and not gradually narrowing to the acute apex, and from *Th. orlandoi*, by the medial branch of male cercus distinctly longer; moreover from *Th. laminata*, *Th. balnearis* and *Th. orlandoi*, *Th. p. surinam* subsp. nov. differs in the female genital plate much larger and partly covering the lateral parts of ovipositor base (*vs.* located almost completely under this base).

Genus *Ligocatinus* Rehn, 1901, gen. resurr.

Note. This genus was originally described under the homonymic name *Amaura* Brunner-Wattenwyl, 1878 and contained *A. spinata* Brunner-Wattenwyl, 1878 and *A. punctata* Brunner-Wattenwyl, 1878 but without designation of its type species (Brunner-Wattenwyl 1878). Later, it was renamed into *Ligocatinus* by Rehn (1901), and *A. spinata* was designated as a type species of *Ligocatinus* by Kirby (1905). The second species was recently moved to the genus *Zenirella* Piza, 1973 by Gorochov (2014). Thus, only one species was left in this genus, but Cadena-Castañeda (2015a) included this species in the former genus *Homotoicha* and considered *Ligocatinus* as its junior synonym. However, *Ligocatinus* is a separate genus more similar or related to *Zenirella* Piza, 1973 than to *Theudoria* (and to its subgenus *Homotoicha*) by the following characters of male abdominal apex:

ninth abdominal tergite is with a pair of distinct posterodorsal lobes having a few apical teeth or tubercles (*vs.* this tergite lacks posterodorsal lobes and similar to nearest proximal tergites in structure; for comparison see Figs 129, 130, 208, 215, 219, 226, 228, 229); tenth abdominal tergite shorter than previous one but with unpaired posteromedian lobe directed more or less downwards/backwards and located above rather small (normal in shape) epiproct (in *Theudoria*, this tergite is not shorter than ninth one and without sclerotized posteromedian lobe; see above-mentioned figures); male genital plate is moderately short and with shallow or moderately shallow posteromedian notch (*vs.* this plate moderately long and with rather narrow and deep or very deep posteromedian notch; see Figs 129, 130, 209, 216, 220, 227). Moreover, *Ligocatinus* male cercus (Figs 226, 227, 230) lacks distinct rounded concavity bordered by a row of long and dense hairs (such concavity is characteristic for the *Theudoria* congeners studied by me; Figs 126–128). Thus, it is reasonable to restore the genus *Ligocatinus* as a genus close to *Zenirella*; inclusion of *Zenirella* in *Ligocatinus* as its subgenus also can not be excluded, but their male genitalia are very different: completely membranous in *Ligocatinus*, and with a pair of large sclerites in *Zenirella* (Gorochov 2014: fig. 150).

***Ligocatinus paraguay* sp. nov.**
(Figs 129, 223–230)

Etymology. The species is named after Paraguay, the country where it was collected.

Type material. *Holotype* – male, PARAGUAY: “Reserva Pantanal Paraguayo” near Bolivia, Los Tres Gigantes Biological Station on Rio Negro (Parana Basin), meadow with very high grass and numerous bushes (and with sparse low trees) near water, at light, 31 January – 4 February 2014, A. Gorochov.

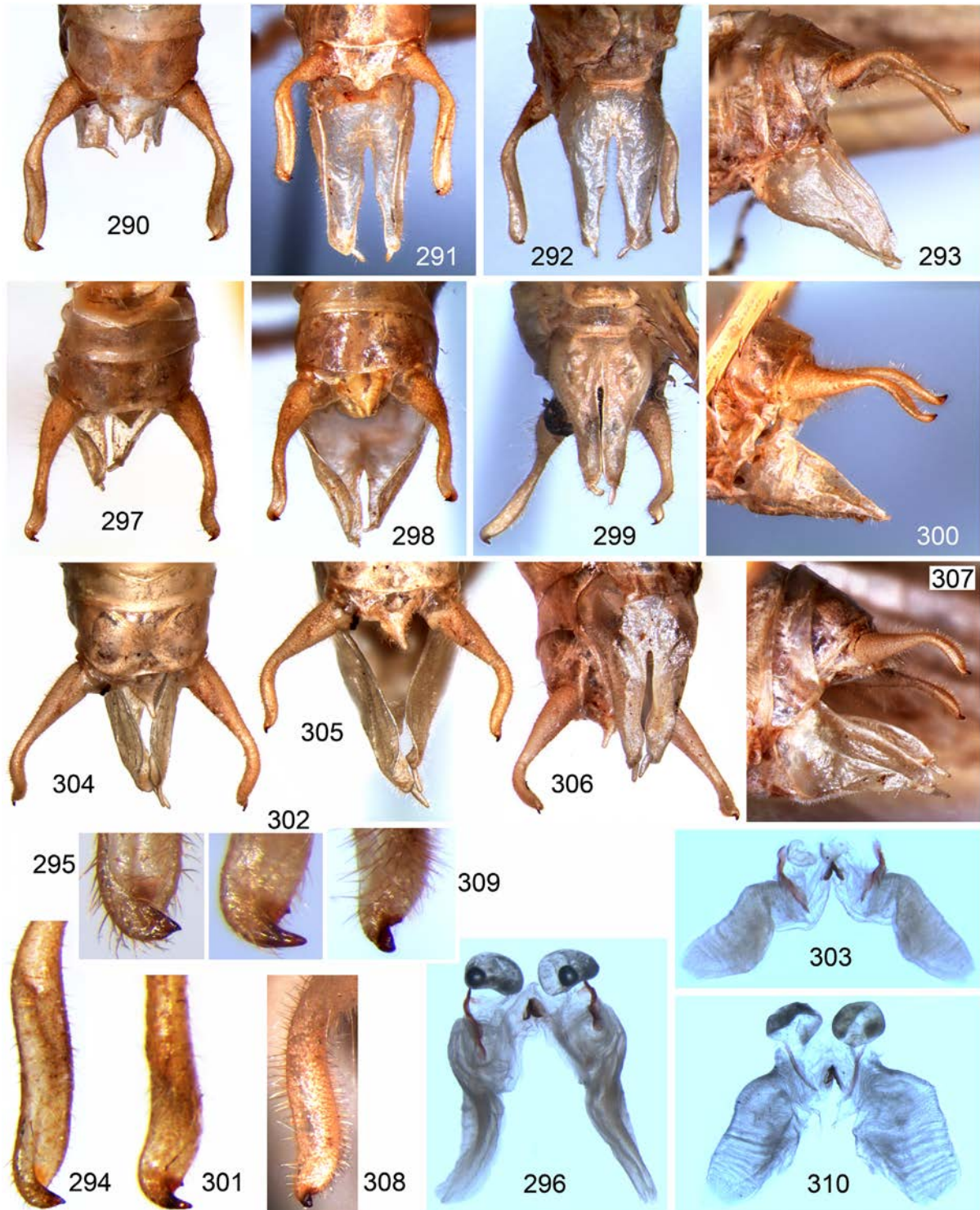
Description. *Male* (holotype). Body medium-sized, yellowish (greenish in living condition) with rose eyes, dark rose dorsal longitudinal spot on upper rostral tubercle, light brown stripe on each lateral pronotal lobe along dorsal edge (this stripe shortly interrupted almost in middle part; Fig. 223), light brown medial part of dorsal field in right (lower) tegmen, semitransparent some areas in dorsal fields of both tegmina (Figs 224, 225), mainly transparent hind wings (except for small yellowish distal portion of costal part), dark brown distal parts of majority of spines, spinules and denticles on legs, and light

brown dorsal part of ninth abdominal tergite having brown to dark brown teeth on posterior lobes (Figs 226–229). Upper rostral tubercle not projected before lower rostral tubercle, having short dorsomedian groove, narrowing to rounded and barely inflated apical part (scape almost twice as wide as this part); this apical part with slightly flattened anterior surface and in contact with apex of lower rostral tubercle (apical part of latter tubercle somewhat narrower than apical part of previous tubercle) (Figs 223, 224). Pronotum almost carinate along lateral edges of disc; anterior and posterior edges of disc straight and clearly convex, respectively (Fig. 224); lateral pronotal lobes as in Fig. 223. Wings long (hind wings somewhat longer than tegmina); tegmina narrow, with normal RS (having two branches in distal half), two branches on RA and stridulatory apparatus as in Figs 224 and 225; legs with both tympana oval (opened), with several small denticles on both ventral keels of hind femur, without denticles on these keels of other femora, with a few spinules on both ventral keels of all tibiae, as well as with rather numerous short spines on both dorsal keels of hind tibia. Ninth abdominal tergite somewhat longer than other abdominal tergites, with a pair of elongate lobes having characteristic teeth on their apical parts (teeth of left and right lobes slightly asymmetrical; Figs 226, 228, 229); notch between these lobes rather large but somewhat wider than deep (Figs 129, 226); tenth abdominal tergite with rather small posteromedian lobe (this lobe distinctly wider than long and somewhat roundly bilobate; Fig. 129); epiproct located under latter lobe, small, longitudinally oval and directed downwards; cercus rather long and moderately thin, arcuately curved in distal half, with thinner apex having two small denticles (Fig. 230); genital plate slightly wider than long, narrowing to rather narrow apex having a pair of short posterior lobules (with small but elongate styles) and shallow (somewhat wider than deep) notch between them (Figs 129, 227).

Female unknown.

Length (mm). Body 17.5; body with wings 33.0; pronotum 3.8; tegmina 25.0; hind femora 17.0.

Comparison. This species is distinguished from *L. spinatus* (Argentina: Buenos Aires) by the posterior lobes of ninth male abdominal tergite clearly longer, notch between them distinctly deeper and probably narrower, posterior lobe of tenth male abdominal tergite somewhat less projected behind last tergite, and male genital plate with the apical part



Figs 290–310. *Parableta* Br.-W.: 290–296 – *P. (Parableta) cercata* sp. nov.; 297–303 – *P. (P.) nikolaii* sp. nov.; 304–310 – *P. (P.) ?boliviana* Bruner. Male abdominal apex from above (290, 297, 304), from above/behind (291, 298, 305), from below (292, 299, 306) and from side (293, 300, 307); distal (curved) portion of left male cercus (294, 301, 308) and its apical part (295, 302, 309) from above/behind; male genitalia from above (296, 303, 310).

narrower and having less wide posteromedian notch and longer styles (see Figs 129 and 130).

***Ceraiaella zebrina pudica* subsp. nov.**

(Figs 257–266)

Etymology. This subspecies name is the Latin word “pudica” (modest) given in connection with the body colouration less spotted.

Type material. *Holotype* – male, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Ucayali River, environs of Sapani Vill., ~300 m, primary/secondary forest, at light, 26–31 October 2008, A. Gorocho, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky. *Paratype* – female, same data as for holotype.

Description. *Male* (holotype). General appearance very similar to that of nominotypical subspecies (see Cadena-Castañeda 2015), but body colouration less spotted: body yellowish (greenish in living condition) with rose eyes, with almost whitish both lower half of pronotal lateral lobe and gena under eye, with light brown distal two thirds of antenna, upper part of pronotal lateral lobe, areas on pronotal disc along its lateral and posterior edges, stridulatory vein of left tegmen, two large dorsal spots in proximal half of hind femur, apical part of this femur, four transverse bands on hind tibia (proximal band poorly distinct and located only on dorsal half of tibia) and distal half of cercus, with transparent most part of hind wing, with brown distal half of epiproct, and with dark brown proximal third of cercus (colouration and structure of some body parts illustrated in Figs 257–262). Male genitalia with a pair of large and more or less rounded semisclerotized structures having numerous very small denticles (Fig. 266).

Female. Colouration and external structure of body as in male, but hind femur with smaller most proximal spot, hind tibia without proximal darkened band, abdominal apex unspecialized (typical of this tribe in structure) and with dark brown cerci and a pair of rather large lateral spots on proximal half of epiproct (Fig. 263); genital plate and ovipositor (Figs 264, 265) almost identical to those of *C. triannulata* Hebard, 1933, but ovipositor somewhat shorter than in *C. z. zebrina* Cadena-Castañeda, 2015.

Length (mm). Body: male 18.0, female 15.0; body with wings: male 35.0, female 38.0; pronotum: male 4.0, female 3.9; tegmina: male 28.0, female 28.5; hind femora: male 18.0, female 19.0; ovipositor 6.5.

Comparison. The new subspecies differs from *C. z. zebrina* (Brazil: state Amazonas) in the clearly less spotted hind femora and somewhat shorter ovipositor (its length is 6.5 mm in *C. z. pudica* subsp. nov. and 7.2–7.8 mm in the nominotypical subspecies). See also the notes on *C. ?triannulata* below.

***Ceraiaella ?triannulata* Hebard, 1933**

(Figs 267–275)

Material studied. PERU: 7 males, 5 females, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, at light, 20–23 October 2008, A. Gorocho, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky; 1 male, 1 female, same data but 5–9 December 2017, A. Gorocho, G. Irisov; 1 male, same province, ~40 km NE of Satipo Town, environs of Calabaza Vill., ~2000 m, primary forest, at light, 16–17 October 2008, A. Gorocho, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky.

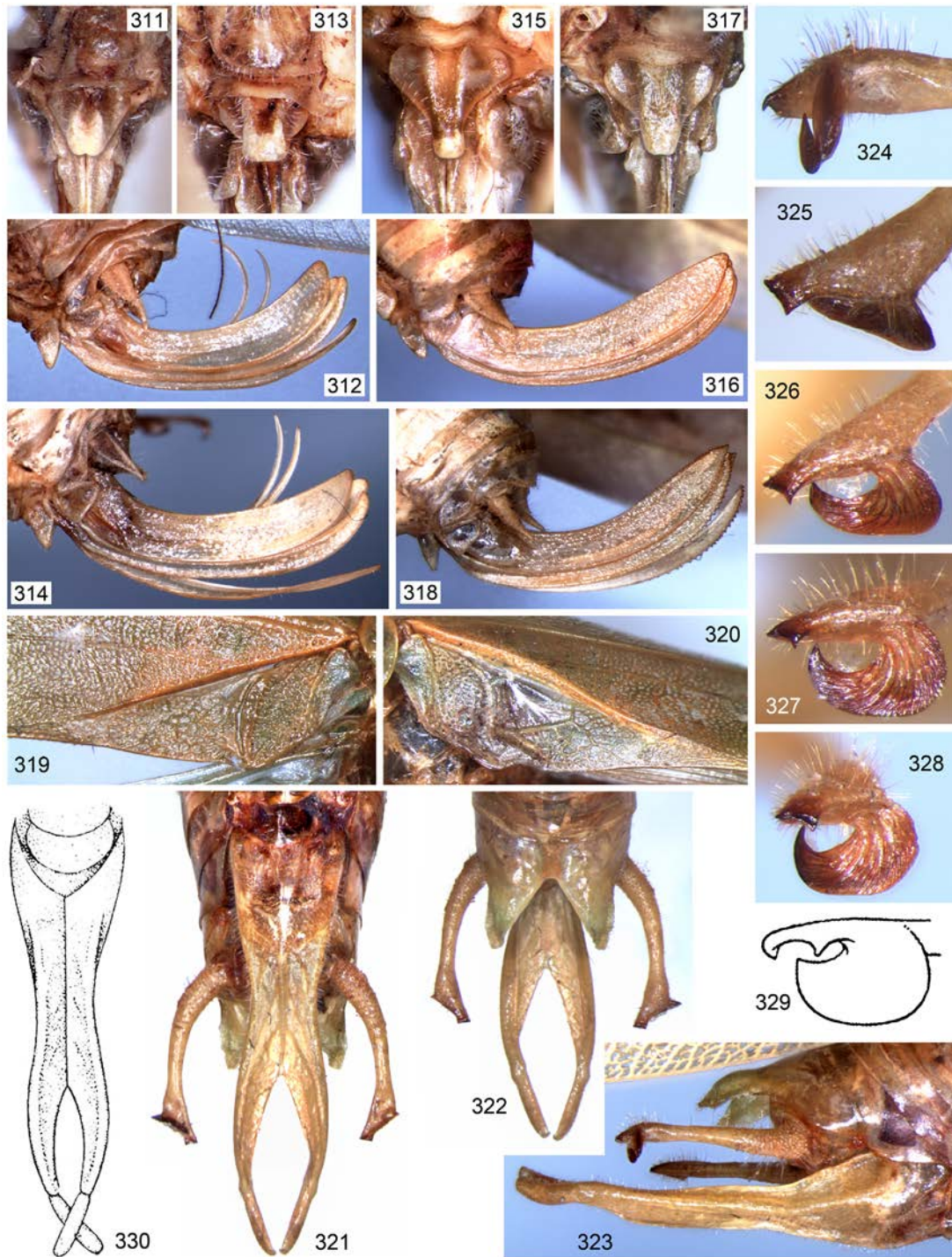
Notes. This species was described from one female collected in Colombia (Hebard, 1933). Its male is reliably unknown until now. Thus, the above-mentioned specimens may be determined as this species only questionally. They differ from *C. z. pudica* subsp. nov. in the male cerci smaller and darker (Figs 269–271), male genital plate having a slightly narrower space between the bases of styles (Figs 269, 270), epiproct darker in the both sexes (Figs 271, 272), and semisclerotized structures of male genitalia much smaller (Figs 274, 275); from *C. z. zebrina*, they are distinguished by the same cercal and genital characters of male as well as less spotted hind femora and somewhat shorter ovipositor (the latter is almost as long as in *C. z. pudica* subsp. nov.; Fig. 273).

Phaneropterinae incertae sedis

Genus *Enthephippion* Bruner, 1915

= *Phaneropterella* Piza, 1977, syn. nov.

Note. This genus was described from a single species (*E. obscuripenne* Bruner, 1915). The photograph of its holotype, published in OSF, shows that it is a female very similar to the types of *Amaura olivacea* Brunner-Wattenwyl, 1891, *A. borelli* Giglio-Tos, 1897, *Ligocatinus sordidus* Rehn, 1921, *L. minutus* Rehn, 1921, *Phaneroptera quadrivittata* Piza, 1967



Figs 311–330. *Parableta* Br.-W. and *Chloroscirtus* Sauss. et Pict.: 311, 312 – *P. (Parableta) cercata* sp. nov.; 313, 314 – *P. (P.) nikolaii* sp. nov.; 315, 316 – *P. (P.) ?boliviana* Bruner; 317, 318 – *P. (?P.) denticulata* sp. nov.; 319–328 – *Ch. columbianus* sp. nov.; 329, 330 – *Ch. discocercus* Rehn [after Rehn (1918), modified]. Female genital plate from below (311, 313, 315, 317); ovipositor from side (312, 314, 316, 318); stridulatory apparatus of left (319) and right (320) male tegmina; male abdominal apex from below (321), from above (322) and from side (323); apical part of right male cercus from side (324), from side/above (325), from side/above/behind (326) and from behind but slightly from different positions (327, 328, 329); male genital plate from below (330).

and *Phaneropterella infumata* Piza, 1977. Majority of these species names have been attributed to the former genus *Homotoicha* (?Scudderiini) and synonymized with each other, but two of them were considered as separate species of *Homotoicha* (*L. sordidus* and *L. minutus*), and *E. obscuripenne* as well as *Ph. infumata* were left in the genera *Enthephippion* and *Phaneropterella* outside any tribe (OSF). In reality, all these names most probably belong to representatives of the same genus, and *Phaneropterella* is a new synonym of *Enthephippion*.

The genus *Enthephippion* is characterized by the following features: body is moderately small and with mainly reddish brown colouration; head is with rostral tubercles almost as in *Ligocatinus* (see above); lateral pronotal lobes are approximately as high as long or slightly shorter, with humeral notches moderately deep as well as widely and roundly angular (Figs 231, 239); wings are long, with tegmina narrow and somewhat shorter than hind wings; male stridulatory apparatus is with indistinct mirror in left tegmen and with poorly distinct (having numerous irregular veinlets) mirror in right tegmen (Figs 232, 233); male last tergite is rather simple, with posterior lobe short, wide and posteriorly truncate; epiproct, paraprocts and cerci of male are also rather simple; male genital plate is short, narrowing to moderately narrow apex which has very small styles and shallow notch between them (Figs 234–236); female genital plate is small and triangular (Fig. 238); male genitalia are completely membranous; ovipositor is short or very short, with numerous and rather large denticles located as on dorsal and ventral edges as on lateral surfaces (Figs 237, 240). This ovipositor is more or less similar to that of *Plagiopleura* Stål, 1878, attributed recently to the tribe Plagiopleurini Brunner-Wattenwyl, 1878 (Cadena-Castañeda 2015c), but very dissimilar to ovipositor of the genera included here in ?Scudderiini; thus, tribal position of this genus is in need of examination.

Enthephippion includes the following species: 1) *E. borelli* sp. resurr. et comb. nov. from Bolivia with one synonym (*L. sordidus* syn. nov. from Mato Grosso do Sul State of Brazil located near Bolivia) [this species has lateral pronotal lobes rather short and with almost round posteroventral parts (Fig. 231), and its ovipositor is somewhat elongate and narrowly angular in distal part (Fig. 237)]; 2) *E. olivaceum* comb. nov. from Rio Grande do Sul State of Brazil with one probable synonym (*Ph. quadrivittata* from Minas

Gerais State of Brazil [lateral pronotal lobes of this species somewhat longer and have more oblique posteroventral edges (approximately as in Fig. 239), and its ovipositor is clearly shorter and with more obtuse apex (Fig. 240)]; 3) *E. obscuripenne* from Mato Grosso State of Brazil [lateral pronotal lobes are almost as in *E. olivaceum*, but ovipositor is distinctly longer than in the both previous congeners]. The two species known only from males (*E. minutum* comb. nov. and *E. infumatum* comb. nov. from Goiás State of Brazil) have their pronotum similar to that of *E. olivaceum* in shape (Fig. 239) and may be separate species as well as synonyms of *E. olivaceum* or *E. obscuripenne*.

***Enthephippion borelli* (Giglio-Tos, 1897),
sp. resurr. et comb. nov.
(Figs 231–238)**

= *Ligocatinus sordidus* Rehn, 1921, syn. nov.

Material studied. BOLIVIA: 2 males, 3 females, Santa Cruz Department, 23 km SW of Santa Cruz City, El Sol Natural Park (small private area with secondary forest), ~600 m, on leaves of bushes at night, 14–16 February 2014, A. Gorochoy; 3 males, 1 female, same province, ~70 km SW of Santa Cruz City, Amboro National Park, “Refugio Los Volcanes”, ~1000 m, primary forest, on leaves of bushes near road at daytime, 16–17 February 2014, A. Gorochoy; 2 females, southern part of Santa Cruz Department (near Brazil), environs of Puerto Suares Town on Rio Paraguay (Parana Basin), ~200 m, secondary forest, on leaves of tree at night, 4–5 February 2014, A. Gorochoy.

Notes. This Bolivian species was synonymized with *E. olivaceum* by Chamorro-Rengifo and Braun (2010). However, these species have different shape of the pronotal lateral lobes and ovipositor: *E. borelli* has these lobes clearly less obliquely truncated and somewhat shorter in lower half, and its ovipositor is also distinctly shorter and more acute at the apex (see Figs 237 and 240). These characters allow me to restore this species and to synonymize it with *L. sordidus*.

Genus *Parableta* Brunner-Wattenwyl, 1878

Note. This genus was recently included in the tribe Plagiopleurini (Cadena-Castañeda 2015c). However, its relationship to the genus *Plagiopleura* is problematic, because these genera have very differ-

ent ovipositors: ovipositor of *Parableta* is similar to that of ?Scudderini (i.e. with lateral surfaces lacking distinct denticles; for comparison see Figs 210, 221, 265, 273, 312, 314, 316, 318), but in *Plagiopleura*, it is similar to that of *Enthephippion* (i.e. with lateral surfaces having distinct denticles; Figs 237, 240). Moreover, stridulatory apparatus in the male tegmina of *Parableta* is represented only by a stridulatory vein in the left (upper) tegmen and by this vein, plectrum and one of chords in the right (lower) tegmen; all other parts of the male dorsal tegminal fields have a dense net of numerous veinlets (practically without distinct membranous areas: Figs 279, 280, 283, 284, 287, 288). Such structure of this apparatus as well as shape of head and pronotum in the profile (Fig. 276) indicate a possible relationship of *Parableta* to Microcentrini Brunner-Wattenwyl, 1878.

In the genus *Parableta*, eight species have been included (OST); however, these congeners are rather diverse in the structure of their abdominal apices, and they are here divided into three subgenera which are described in the following key for *Parableta* subgenera:

1. Male cerci moderately long, with distal part almost angularly (but at obtuse angle) curved downwards and medially, and with small apical hook directed medially or almost backwards (Figs 290–295, 297–302, 304–309); male genital plate rather long and comparatively high in profile (Figs 293, 300, 307), with very narrow and very deep posteromedian notch as well as with small apical styles (Figs 292, 299, 306) subgenus *Parableta* s. str. [Composition: *Parableta integricauda* Brunner-Wattenwyl, 1878 – type species of *Parableta*; *P. soror* Brunner-Wattenwyl, 1891; *P. kempfi* Piza, 1976; *P. tapirapes* Piza, 1981; *P. (P.) cercata* sp. nov.; *P. (P.) nikolai* sp. nov.; possibly *P. areolata* Piza, 1981 and *P. (?P.) denticulata* sp. nov.]
 - Male cerci moderately short; male genital plate distinctly less high, with clearly wider or practically absent posteromedian notch 2
2. Male genital plate short but with a pair of rather long and thin posterior lobes, with large (deep and moderately wide) notch between them, and with very long but thin styles subgenus *Stylibleta* subgen. nov. [Etymology: from parts of species name “*stylifera*” and generic name “*Parableta*”. Composition: *Parableta stylifera* Piza, 1981 – type species of *Stylibleta*.]
 - Male genital plate rather long, practically without posteromedian notch, and with small styles subgenus *Oscarbleta* subgen. nov. [Etymology: after Oscar Cadena-Castañeda (author of type species of this subgenus) and genus *Parableta*.

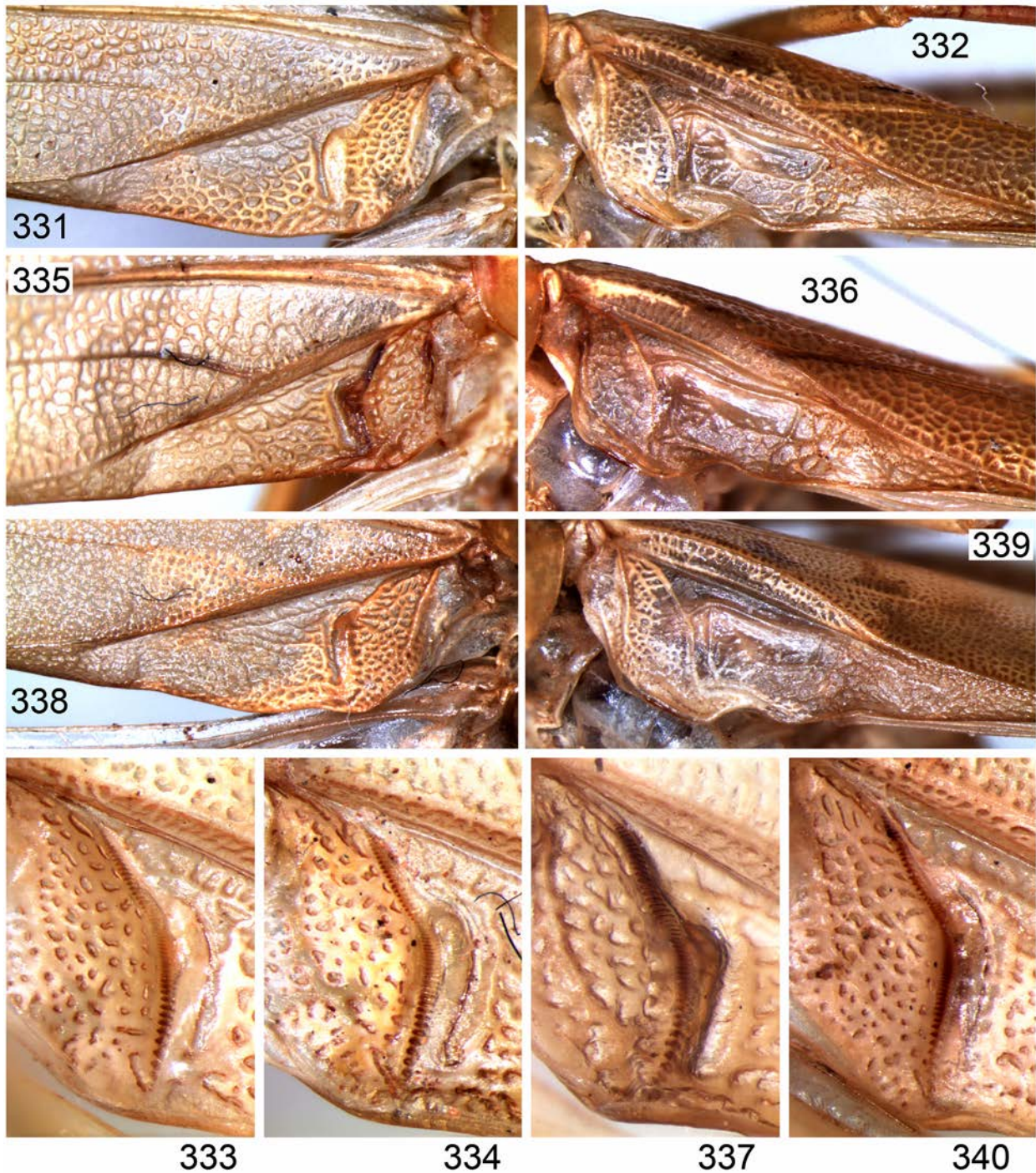
Composition: *Parableta maculosa* Cadena-Castañeda, 2015 – type species of *Oscarbleta*.]

***Parableta (Parableta) cercata* sp. nov.**
(Figs 276–280, 290–296, 311, 312)

Etymology. This species name is based on the Latinized Greek morphological term “cercus” originating from the Greek root meaning tail.

Type material. *Holotype* – male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15 January 2010, A. Gorochov. *Paratypes*: 4 males, same data as for holotype; 2 females, ECUADOR, ~70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying primary forest, on leaves of bushes at night, 10–17 November 2005, A. Gorochov, A. Ovtshinnikov; 2 females, ECUADOR, 60–70 km E of Lago [lake] Grande on Rio Cuyabeno, very lowlying primary forest, on leaves of bushes at night, 2–9 November 2005, A. Gorochov, A. Ovtshinnikov.

Description. *Male* (holotype). Body colouration (Figs 276, 277, 279, 280, 290–295) yellowish with greenish tinge (greenish in living condition) and following marks: eye and most part of antennal flagellum (except for its base) light greyish brown; head dorsum with a pair of longitudinal whitish lines behind eyes; tegmina with three whitish spots of different size bordered by dense brown dots on each lateral field, with light brown dots on this field located along (near) lateral edge of dorsal field and with almost whitish dorsal field of right (lower) tegmen; most part of hind wing with transparent membranes, but distal portion of its costal part yellowish; legs with light brown interrupted longitudinal stripe on outer side of fore tibia, with brown solid longitudinal stripe on outer side of hind tibia (latter stripe absent in basal part of this tibia and in its distal quarter as well as almost in contact with bases of outer tibial spines), and with small and rather sparse dark brown marks on all tarsi; spines and denticles of legs as well as small apical hook of each cercus brown to light brown. Head with upper rostral tubercle rather small and simple (narrow in subapical part, barely widened and roundly truncated in apical part, with longitudinal dorsomedian groove reaching apex of this tubercle); lower rostral tubercle also small and simple, narrowing to narrowly rounded apex which somewhat narrower than apex of previous tubercle and almost in contact



Figs 331–340. *Euthyrrhachis* Br.-W., male: 331–337 – possible *E. consobrina consobrina* (Br.-W.) from “Reserva Comunal Ashaninka” (331–334) and from environs of Rio Venado Vill. (335–337); 338–340 – *E. c. elsol* subsp. nov. Stridulatory apparatus of left (331, 335, 338) and right (332, 336, 339) tegmina; stridulatory vein of left tegmen from below (333, 334, 337, 340).

with ventral surface of latter apex; pronotum with disc flat and slightly narrowing to head, and with lateral lobes as in Fig. 276; wings long, but tegmina slightly shorter than hind wings, moderately narrow, with normal RS having two branches in distal half, with two branches of RA in its distal part, with stridulatory vein of left tegmen wide in its lateral (proximal) half (Figs 277, 279), and with stridulatory apparatus in right (lower) tegmen as in Fig. 280. Last tergite almost as each of previous abdominal tergites in length but with short and wide as well as roundly truncate posteromedian lobe; epiproct with apical part conical but short (almost denticle-like) and directed backwards/upwards (Fig. 290); cercus rather long and moderately thin, distinctly thinner before cercal middle, with distal half dorsally concave and curved partly downwards (region of this curvature obtusely angular in profile; Figs 291, 293, 294) as well as having small apical denticle directed medially (Figs 295); genital plate rather large, narrowing to apex, with moderately high lateral parts, with a pair of almost keel-like lateral folds, with small styles, and with very deep and very narrow notch between them (Figs 292, 293); genitalia with a pair of long membranous lobes, a pair of small stick-like lateral sclerites at base and one small semisclerotized plate between them (this plate with more or less deep fold along its median line; Fig. 296).

Variations. Whitish lines on head dorsum sometimes absent; one paratype with colouration of tegminal lateral field as in holotype, but this field in other males with 1–2 small brown spots (i.e. without characteristic whitish spots or with indistinct traces of such spots only).

Female. General appearance very similar to that of males, but darkish marks on fore tibia sometimes absent, dark brown marks on tarsi often very sparse, lateral tegminal field with 0–3 small darkened spots only, and dorsal tegminal field completely yellowish and with venation typical of females of *Parableta* s. str. Last tergite having posteromedian lobe almost as in male in shape but smaller; epiproct similar to that of male but with clearly shorter conical part; cerci elongately conical but comparatively short and with almost spinule-like apical part; genital plate small and rather narrow (this plate almost triangular but with rather high and slightly concave lateral parts as well as with narrow and truncated or barely notched apex; Fig. 311); ovipositor completely lacking denticles (Fig. 312).

Length (mm). Body: male 20.0–23.0, female 21.0–23.0; body with wings: male 43.0–45.0, female 45.0–47.0; pronotum: male 5.1–5.4, female 5.7–6.1; tegmina: male 32.0–34.0, female 36.0–38.0; hind femora: male 21.0–22.0, female 23.0–25.0; ovipositor 8.0–8.5.

Comparison. The new species is distinguished from *P. tapirapes* (Brazil: Mato Grosso) and *P. boliviana* (Bolivia: Santa Cruz) by the stridulatory vein of left tegmen clearly wider; from *P. kempfi* (Brazil: Amazonas), by the proximal (not partly curved downwards) portion of male cercus distinctly shorter (the male genital plate is almost twice as long as this portion in *P. cercata* sp. nov., but such ratio is about 1.5 in *P. kempfi*); from *P. soror* (Brazil: Amazonas) and *P. areolata* (Brazil), by the ovipositor lacking denticles as well as by the styles of male genital plate shorter (only from *P. soror*). Differences from *P. integricauda* are less clear because the latter species was described from syntypes collected in Ecuador and Surinam, the countries located rather far from each other (i.e. these specimens may belong to two different species); from the Ecuadorian syntype (the photographs of this female are in OSF), *P. cercata* sp. nov. differs in the female tegmina somewhat longer (ratio lengths of tegmen to hind femur is about 1.5 in the new species and 1.4 in *P. integricauda*), as well as in the hind tibia having a distinct darkened longitudinal stripe on the outer surface.

***Parableta (Parableta) nikolaii* sp. nov.**
(Figs 281–284, 297–303, 313, 314)

Etymology. This species is named after Nikolai Leon Fernandez (Peru) who helped me a lot during the Peruvian field work in 2017.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov. *Paratypes*: 9 males, same data as for holotype; 1 male, 1 female, same province, ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky; 1 male, PERU: bank of Rio Morona near its mouth and not far from Puerto America Town, ~200 m, primary forest, at light, 20–23 January 2010,

A. Gorochoy; 1 male, ECUADOR, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15 January 2010, A. Gorochoy; 1 male, 1 female, “Alto-Amaz.” [PERU ?], determined as “*Plagiopleura*” (male) and “*Parableta integricauda* Br.” (female).

Description. *Male* (holotype). General appearance similar to that of holotype of *P. cercata* sp. nov. but with following differences: upper rostral tubercle with barely notched (barely bilobate) apex; pronotum with a pair of whitish lines along lateral edges of disc; tegmina with lateral field yellowish (greenish in living condition) but having three small greyish brown spots along median line between Sc and anal tegminal edge (such colouration more similar to that of some paratypes of *P. cercata* sp. nov.) (Fig. 281) and with stridulatory apparatus as in Figs 283, 284 (stridulatory vein of left tegmen clearly narrower than that of *P. cercata*; see Figs 279 and 283); fore tibia without darkened marks; such marks on tarsi almost indistinct; dorsal parts of abdominal tergites rose; distal (directed partly downwards) portion of cercus distinctly shorter (Figs 297, 298, 300, 301), slightly S-shaped dorsally (Fig. 301) and having apical hook somewhat thinner (medial edge of cercus also with very small subapical denticle; Fig. 302); genitalia somewhat smaller than in *P. cercata* sp. nov. but almost indistinguishable from those of this species in structure (Fig. 303).

Variations. Whitish lines on head and pronotum often indistinct; two males from “Reserva Comunal Ashaninka” with somewhat different spots on tegminal lateral field (one male with these spots almost as in holotype of *P. cercata* sp. nov., but second male with two large light brownish rose spots having darker borders); male from environs of Rio Venado Vill. almost without rose areas on abdominal tergites; males from environs of Rio Morona with apical part of upper rostral tubercle narrowly rounded (not barely widened and not more or less truncated; possibly another subspecies).

Female. Colouration and external structure of body similar to those of males, but whitish lines developed on head dorsum and absent on pronotum, lateral tegminal field in female from “Reserva Comunal Ashaninka” with three large whitish spots (having rather numerous greyish brown dots; Fig. 282) and in female from “Alto-Amaz.” without spots, dorsal tegminal field and abdominal apex almost as

in female of *P. cercata* sp. nov. (but genital plate with somewhat wider apex, and ovipositor slightly longer; Figs 313, 314).

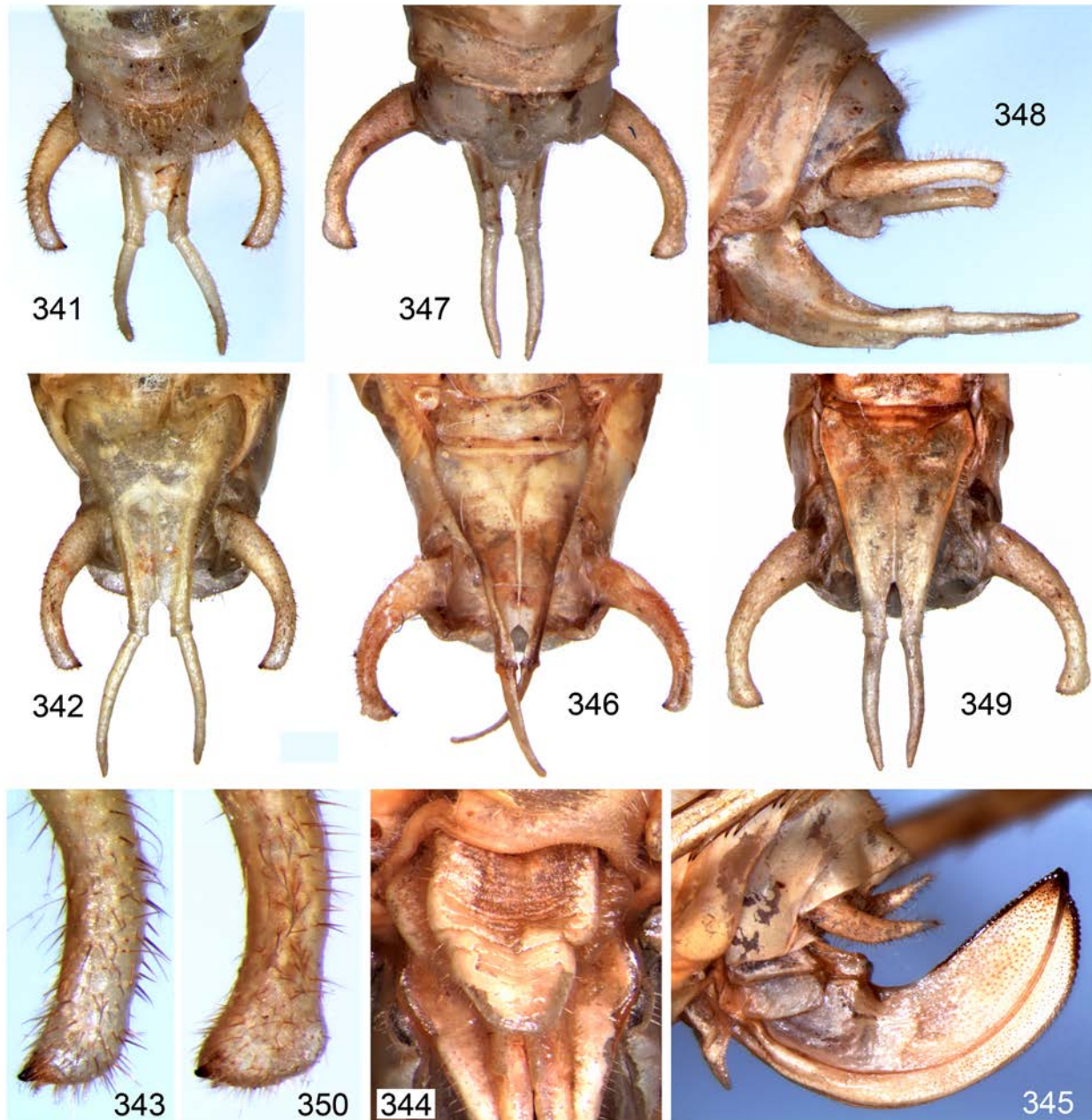
Length (mm). Body: male 20.0–24.0, female 21.0; body with wings: male 43.0–47.0, female 48.0; pronotum: male 5.1–5.6, female 5.4; tegmina: male 33.0–37.0, female 38.5; hind femora: male 19.0–23.0, female 23.0; ovipositor 9.0.

Comparison. The new species is distinguished from *P. cercata* sp. nov. by the characters mentioned above (especially by the shorter distal portion of male cerci and distinctly narrower stridulatory vein in the left tegmen); from *P. kempfi*, by the shorter distal portion of male cerci not widened in its proximal part; from *P. tapirapes*, by the tegmina less widened in the middle part (their anal edge is almost straight, but not slightly arcuate); from *P. integricauda*, probably by the same tegminal character as *P. cercata* sp. nov. and presence of a dark longitudinal stripe on the outer side of hind tibia; from *P. soror* and *P. areolata*, by the ovipositor lacking denticles; and from *P. boliviana*, in the stridulatory vein of left male tegmen clearly longer, and male cercus with its distal portion flattened (dorsally concave) but not cylindrical.

***Parableta (Parableta) ?boliviana* Bruner, 1915**
(Figs 285–288, 304–310)

Material studied. BOLIVIA: 3 males, Santa Cruz Prov., 23 km SW of Santa Cruz City, El Sol Natural Park (small private park), ~600 m, primary/secondary forest, on leaves of bushes at night, 14–16 February 2014, A. Gorochoy; 1 female, same province, ~70 km NWW of Santa Cruz City, Amboro National Park, Mataracu Camp, ~800 m, primary forest, on leaf of bush at night, 8–13 February 2014, A. Gorochoy; 1 female, same province and park, “Refugio Los Volcanes”, ~1000 m, on leaf of tree at night, 16–17 February 2014, A. Gorochoy.

Notes. This species was described from the Santa Cruz Province of Bolivia. The above-listed specimens are very similar to *P. boliviana* syntypes in the general appearance, shape of stridulatory vein (in the male left tegmen) and structure of ovipositor (lacking denticles along all its edges; see photographs in OSF). But structure of male copulatory device in *P. boliviana* is poorly described; therefore the belonging of the specimens studied here to this species is problematic. It is useful to note also that the general appearance of these specimens is similar to that of the previous



Figs 341–350. *Euthyrrhachis* Br.-W.: 341–346 – possible *E. consobrina consobrina* (Br.-W.) from “Reserva Comunal Ashaninka” (341–345) and from environs of Rio Venado Vill. (346); 347–350 – *E. c. elsol* subsp. nov. Male abdominal apex from above (341, 347), from below (342, 346, 349) and from side (348); distal part of right male cercus from above (343, 350); female genital plate from below (344); ovipositor from side (345).

congeners (*P. cercata* sp. nov. and *P. nikolaii* sp. nov.); however, all the males are without darkened spots on the lateral tegminal field (Fig. 285), all the females are with two rather small darkened spots along the lateral (anterior) branch of MP+CuA1 (Fig. 286),

upper rostral tubercle is similar to that of *P. cercata* sp. nov. but with apical part almost not widened, stridulatory vein in the male left tegmen is narrower than in *P. cercata* sp. nov. and shorter than in *P. nikolaii* sp. nov. (for comparison see Figs 279, 283, 287), male

cercus is with the proximal and distal portions almost as in *P. nikolaii* sp. nov. in length (the latter portion is more straight, cylindrical but not flattened and not dorsally concave, and with the apical hook directed more backwards than medially; Figs 304–309), male genitalia are almost as in *P. cercata* sp. nov. but with the membranous posterior lobes somewhat shorter (Fig. 310), and female genital plate and ovipositor as in Figs 315, 316.

***Parableta* (?*Parableta*) *denticulata* sp. nov.**
(Figs 289, 317, 318)

Etymology. This species name is the Latin word “denticulata” (denticulate, with denticles) in connection with the ovipositor structure.

Material studied. *Holotype* – female, BOLIVIA: Santa Cruz Prov., 23 km SW of Santa Cruz City, El Sol Natural Park (small private park), ~600 m, primary/secondary forest, on leaf of bush at night, 14–16 February 2014, A. Gorochoy.

Description. *Female* (holotype). Body colouration yellowish with greenish tinge (in living condition, body greenish) and following marks: eyes with brownish posterior parts; lateral ocelli light rose; dorsum of head with a pair of longitudinal whitish lines behind eyes; tegmina with three rather small whitish spots along lateral (anterior) branch of MP+CuA1 (these spots partly bordered by brown dots, and left tegmen with additional similar spot near base of RS; Fig. 289); legs with fore tibia having two short and narrow brownish stripes along distal part of outer ventral keel, with hind tibia having poorly distinct traces of similar stripes on outer surface near bases of spines; abdomen with light rose median areas on fourth, fifth and sixth tergites. Structure of body similar to that of females of previous congeners described above, but upper rostral tubercle as in *P. boliviana*, tegmina clearly wider in middle part (especially in region between branches of MP+CuA1; Fig. 289), genital plate with almost rounded apex (Fig. 317), and ovipositor having acute apex and numerous small (but distinct and acute) denticles along dorsal and ventral edges (Fig. 318).

Male unknown.

Length (mm). Body 26.0; body with wings 49.0; pronotum 5.9; tegmina 38.0; hind femora 24.0; ovipositor 10.8.

Comparison. The new species is more or less similar to *P. soror* and *P. areolata* in the ovipositor

denticulated, but it is distinguished from them by the tegmina wider (from *P. soror*), or by the tegminal region between MP+CuA1 branches slightly wider than the space between Sc and MP+CuA1 in the tegminal middle (from *P. areolata* which has this region distinctly wider than this space). From *P. kempfi* and *P. tapirapes*, known only from males, the new species differs in the tegmina wider (from *P. kempfi*), or in the tegminal costal edge clearly more convex (from *P. tapirapes*); from all the other representatives of *Parableta* s. str., in the ovipositor denticulated; and from the other congeners, in the secondary branches of lateral (anterior) branch of MP+CuA1 clearly sparser (from type species of *Stylibleta* subgen nov.), or in the costal third of tegminal lateral field not darkened (from type species of *Oscarbleta* subgen nov.).

Genus *Chloroscirtus* Saussure et Pictet, 1897

Note. This genus is included in the tribe Phaneropterini in OSF. However, this systematic position is erroneous, because *Chloroscirtus* has the male stridulatory apparatus more or less intermediate between such apparatuses in Scudderini and Microcentrini (Figs 319, 320), male genital plate with distinct styles (Figs 321, 323, 330), and male abdominal apex as well as ovipositor similar to those of *Plagiopleura* (except for the shape of male last tergite having longer posterolateral lobes; Fig. 322); the structure of male cerci is especially similar in *Plagiopleura* type species and in Mexican *Ch. forcipatus* (Brunner-Wattenwyl, 1878).

***Chloroscirtus columbianus* sp. nov.**
(Figs 319–328)

Etymology. The species name is derived from the country where this species was collected.

Type material. *Holotype* – male, COLOMBIA: “Rio Magdalena Columbia, A.S. Woronov 27/VI–9/V 926”.

Description. *Male* (holotype). Body colouration yellowish with greenish tinge, light brown eyes, almost whitish dorsum of epicranium (including upper rostral tubercle and apex of lower rostral tubercle), a pair of yellow longitudinal stripes on epicranium behind eyes (along lateral edges of whitish epicranial part) and on pronotum along lateral edges of its disc, transparent some membranes in stridulatory apparatus of right tegmen and most part of hind wings (but distal portion of their costal part yellowish),

light brown to yellowish abdominal tergites and sternites, and brown apical parts of cerci. Both rostral tubercles rather small and narrowing to almost acute apex, but upper tubercle with dorsomedian groove, lower tubercle anteriorly flattened, and their apices not in contact (barely not reaching to each other); pronotum rather high and short, with elongate but not narrow disc having slightly concave anterior and more convex posterior edges, and with narrow but not deep (almost angular) humeral notches; wings long; tegmina slightly shorter than hind wings, rather narrow, with normal RS and stridulatory apparatus as in Figs 319, 320; last tergite with long and almost angular posterolateral lobes (Fig. 322, 323); epiproct rather narrowly triangular but with widely rounded apex, directed downwards; cerci arcuate in proximal half, with apical part having short but widened and flattened ventral branchlet (posteriorly, this branchlet more hook-like than disc-like) as well as not widened dorsal branchlet curved somewhat medially and with two acute denticles at apex (these denticles located very near each other) (Figs 322–328); genital plate long and narrow, narrowed in middle part, deeply bifurcated in distal half, and with rather long and medially flattened styles (Figs 321, 323); genitalia membranous.

Female unknown.

Length (mm). Body 24.0; body with wings 42.0; pronotum 5.4; tegmina 33.0; hind femora 18.0.

Comparison. The new species is very similar to *Ch. discocercus* Rehn, 1918 (Costa Rica) and may be only its subspecies; it is distinguished from the latter congener in the ventral branchlet of apical part of male cercus more hook-like than in *Ch. discocercus*, dorsal branchlet of this cercal part having denticles located very near each other (for comparison see Figs 327–329), and male genital plate with a somewhat deeper posteromedian notch (see Figs 321 and 330). From the other congeners, *Ch. columbianus* sp. nov. differs in the presence of the above-mentioned flattened hook-like structure on the male cercus.

Genus *Euthyrrhachis* Brunner-Wattenwyl, 1878

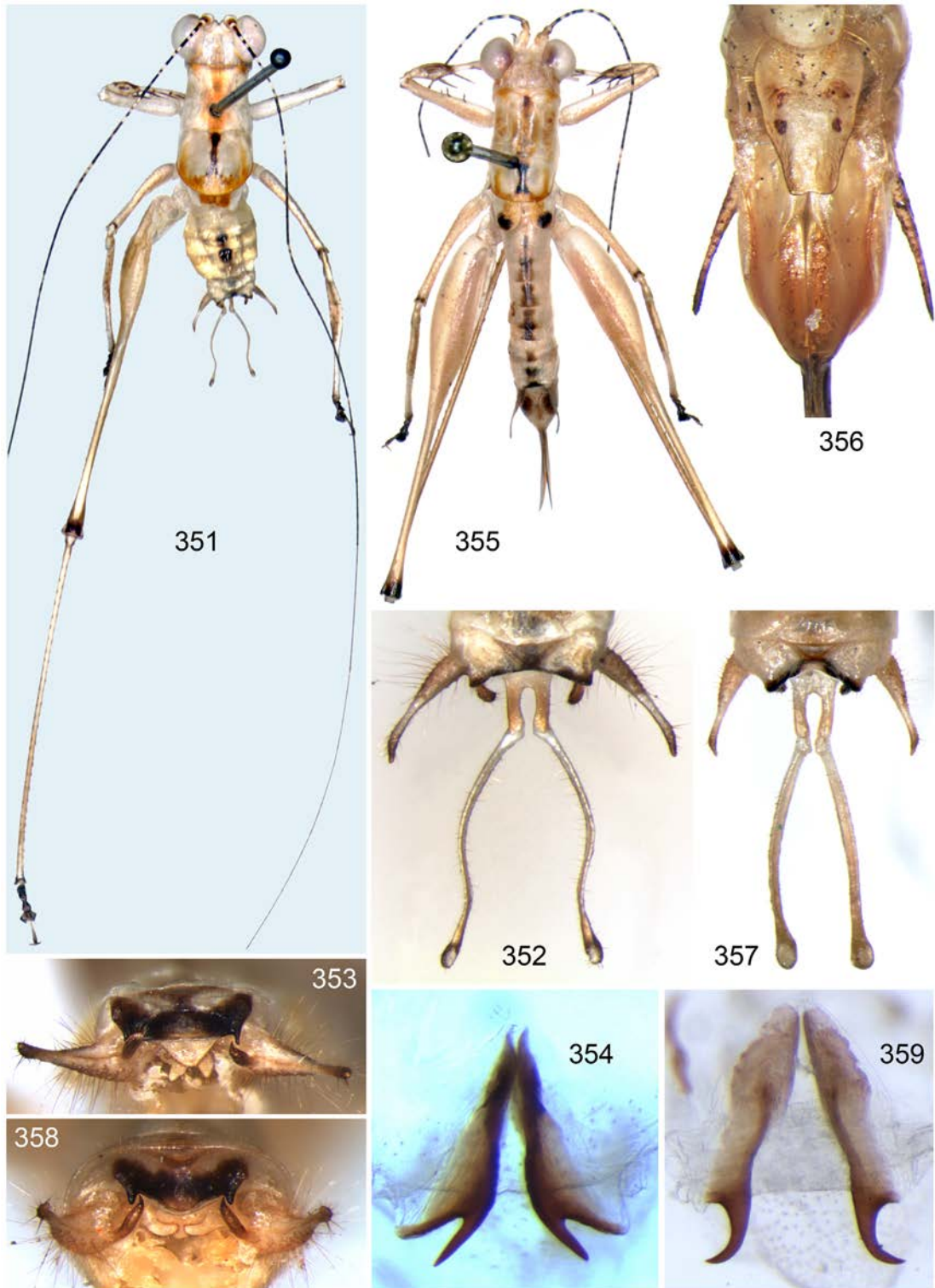
Note. This genus was recently included in the tribe Ectemnini Cadena-Castañeda, 2015 containing only two genera (*Euthyrrhachis* and *Ectemna* Brunner-Wattenwyl, 1878; Cadena-Castañeda 2015). However, such status for this group is problematic because these genera have some characters of

the male tegminal stridulatory apparatus similar to those of *Parableta* and Microcentrini. But in *Euthyrrhachis*, this apparatus has at least one important feature which may be a good diagnostic character for this genus: its stridulatory vein in the left tegmen consists of a thick and rather short transverse part (having a thinner parallel vein along its distal border) and thinner oblique part almost reaching lateral edge of dorsal field (the both parts have stridulatory teeth on their ventral surface; Figs 331, 333–335, 337, 338, 340). This character as well as all the other features, visible in the photographs from the above-mentioned paper, allow me to put *Homotoicha amazoniensis* Cadena-Castañeda, 2015 (Colombia) in *Euthyrrhachis* as *E. amazoniensis* comb. nov.

Euthyrrhachis ?*consobrina* (Brunner-Wattenwyl, 1891) (Figs 331–337, 341–346)

Material studied. PERU: 2 males, 1 female, Junin Department, Satipo Prov., Rio Tambo Distr., 6 km N of Pichiguia Vill., protected area “Reserva Comunal Ashaninka”, 11.358244°S, 74.0320473°W, ~500 m, primary forest, at light, 14–23 November 2017, A. Gorochov, G. Irisov; 3 males, same province, ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, at light, 5–9 December 2017, A. Gorochov, G. Irisov; 1 male, same data, but 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky; 1 female, bank of Rio Morona approximately at middle of distance between its mouth and its Ecuadorian part, 200–300 m, primary forest, at light, 24–27 January 2010, A. Gorochov.

Note. This species determination is problematic because *E. consobrina* is insufficiently described. Nevertheless *E. consobrina* is a single species of this genus having the styles of male genital plate undoubtedly long (Brunner-Wattenwyl 1891): styles of both *E. griffini* Cadena-Castaneda, 2015 and *E. amazoniensis* are unknown (missing in their type specimens). Thus, differences of the two latter species from *E. consobrina* are unclear, and all these congeners are described from the nearest regions: “Alto Amazonas” in Brazil for *E. consobrina*, and Colombia for the two other species. These circumstances allow me to determine the above-listed specimens only questionable; however, these specimens have at least one small difference from Colombian representatives:



Figs 351–359. *Phlugiola* Karny: 351–356 – *Ph. paratushali* sp. nov.; 357–359 – *Ph. amazonia* Gor. Body of male (351) and female (355) from above; male abdominal apex with genital plate from above (352, 357) and without genital plate from behind (353, 358); male genitalia from above (354, 359); female genital plate and base of ovipositor from below (356).

the posteromedian notch of male genital plate is comparatively less deep (Figs 341, 342, 346). Body colouration of these specimens is yellowish (greenish in living condition) with greenish tinge, a pair of reddish stripes on disc along its lateral edges, and brown small areas on tympanal membranes. There are also some variations: the pronotal disc sometimes uniformly yellowish; stridulatory vein and stridulatory teeth are significantly or completely darkened in three males from environs of the Rio Venado Village (Figs 335, 337), but in the other males, this vein is yellowish, and stridulatory teeth are only insignificantly darkened (Figs 331, 333, 334); dorsal surface of fore tibia is often light brown with a brown area between its tympana, but sometimes this dorsal surface completely yellowish or only with a brown area between the tympana; male genital plate with the styles slightly varied in length, and with the posteromedian notch barely varied in depth (Figs 342, 346). The structure of bodyparts is as in Figs 331–337 and 341–346.

***Euthyrrhachis consobrina elsol* subsp. nov.**
(Figs 338–340, 347–350)

Etymology. This subspecies is named after its type locality, El Sol Natural Park in Bolivia.

Type material. *Holotype* – male, BOLIVIA: Santa Cruz Prov., 23 km SW of Santa Cruz City, El Sol Natural Park (small private park), ~600 m, secondary forest, on leaf of bush at night, 14–16 February 2014, A. Gorochov.

Description. *Male* (holotype). General appearance very similar to that of possible nominotypical subspecies (see above). Body colouration (Figs 338–340, 347–350) yellowish with greenish tinge (completely greenish in living condition), reddish brown areas on eyes, a pair of whitish longitudinal lines on dorsum behind eyes, light brown middle and greyish brown distal parts of antennal flagellum, transparent some membranes of dorsal field in right tegmen and most part of hind wings (but small distal portion of its costal part yellowish), brown tympanal membranes and two small inner marks near distal and proximal edges of inner tympanum, and light brown similar marks on outer surface of fore tibia. Upper rostral tubercle rather narrow and short, with longitudinal median groove on its dorsum and almost truncate apex; lower rostral tubercle also short, conical but with flattened anterior surface and almost

acute apex which in contact with apex of previous tubercle; pronotum rather high but short, with flat and elongate (but not narrow) disc as well as not deep humeral notches; wings long; tegmina insignificantly shorter than hind wings, rather narrow, with moderately wide medial (anal) half of stridulatory vein and without distinct mirror in left tegmen (Fig. 338), as well as with elongate and rather narrow membranous mirror in right tegmen and with stridulatory vein of left tegmen as in Fig. 340; last tergite almost truncate posteriorly; epiproct rather widely triangular and widely rounded at apex; paraprocts smaller and rounded; cerci arcuate, with apical part somewhat more widened (with distinct almost tubercle-like lateral convexity) than in probable nominotypical subspecies (Figs 347, 350); genital plate rather long, narrowing to apex which having a pair of almost cylindrical posterior lobules and moderately deep and narrow notch between them; styles of this plate long and barely arcuate, approximately twice as long as the above-mentioned notch (Figs 348, 349); genitalia completely membranous.

Female unknown.

Length (mm). Body 24.0; body with wings 45.0; pronotum 5.0; tegmina 34.0; hind femora 23.0.

Comparison. The new subspecies differs from more northern and possibly nominotypical one in the medial half of stridulatory vein in the left male tegmen slightly narrower (for comparison see Figs 331, 335 and 338), apical part of male cercus more widened (see Figs 343 and 350), and posteromedian notch of male genital plate deeper (see Figs 342, 346 and 349).

Subfamily Meconematinae Burmeister, 1838

Tribe Phlugidini Eichler, 1938

***Phlugiola paratushali* sp. nov.**
(Figs 351–356)

Etymology. This species is named after the Paratushali Village situated near its type locality.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., ~18 km N of Satipo Town, environs of waterfall Sinco Cascadas near Paratushali Vill., 11.283812°S, 74.713915°W, ~800 m, primary forest near small river, on lower surface of large leaf of high bush at night, 28–30 November 2017, A. Gorochov, G. Irisov. *Paratypes*: 1 female, same data as for holotype; 3 females, same department and province,

~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552°S, 74.46307°W, 1000–1200 m, primary/secondary forest, on leaves of bushes at night, 5–9 December 2017, A. Gorochoy, G. Irisov.

Description. *Male* (holotype). External structure and colouration of body very similar to those of *Ph. amazonia* Gorochoy, 2012 (Gorochoy 2012b), but pronotum slightly shorter, anteroventral part of each lateral pronotal lobe with straight (almost concave) edge having very low but more or less angular anterior projection (in *Ph. amazonia*, this edge gradually rounded and without projection), posterior band on hind pronotal lobe somewhat lighter (light brown to yellow; Fig. 351), last abdominal tergite with less deep posteromedian notch (for comparison see Figs 352 and 357) and with median part of posteroventral edge almost straight in posterior view (see Figs 353 and 358), each paraproct with slightly shorter apical spinule-like process (see Figs 353 and 358), and genital plate with S-shaped styles (*vs.* these styles arcuately curved; see Figs 352 and 357). However, genitalia with sclerotized part distinctly different in shape from that of *Ph. amazonia*: posterior hooks of this part directed more laterally than backwards (not more backwards than laterally) and almost straight (not arcuate), and spaces between these hooks and nearest sclerotized projections clearly narrower (see Figs 354 and 359).

Female. General appearance similar to that of female from Ecuador described by Gorochoy (2012b) as belonging to *Ph. amazonia*, but colouration of pronotum almost as in male described above (i.e. practically without dark longitudinal median band on anterior two thirds of pronotal disc), tegmina slightly smaller (pronotum 2.2–2.3 times as long as tegmen in new subspecies and approximately 2 times as long as tegmen in female from Ecuador) and with somewhat smaller darkened area in distal half (Fig. 355), abdomen also with less large and somewhat less contrast darkened median areas on tergites (Fig. 355), and genital plate with slightly narrower distal half almost truncated (not rounded) at apex (Fig. 356).

Length (mm). Body: male (without styles of genital plate) 8.5, female 8.3–9.5; pronotum: male 3.8, female 3.0–3.2; exposed part of tegmina (lateral view): male 1.5, female 0.9–1.1; hind femora: male 10.0, female 9.8–10.2; ovipositor 4.0–4.3.

Comparison. The new subspecies differs from *Ph. amazonia* (type locality: Ucayali Department of Peru not far from Atalaya Town) in the different

shape of male genital sclerite (see Figs 354 and 359) and some other small characters of male listed above. This genital difference indicates that the males compared belong to two separate but very similar species (not subspecies), and that the female from Ecuador (paratype of *Ph. amazonia*), distinguished from all the other congeners by the pronotum darker, may belong to an additional closely related species of this genus.

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