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# Systematics of the American Katydids (Orthoptera: Tettigoniidae). Communication 13: the subtribes Microcentrina and Stilpnochlorina subtrib.n.

# Систематика американских кузнечиков (Orthoptera: Tettigoniidae). Сообщение 13: подтрибы Microcentrina и Stilpnochlorina subtrib.n.

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КЛЮЧЕВЫЕ СЛОВА: Америка, новые таксоны, Microcentrina, Stilpnochlorina subtrib.n., Phaneropterinae, Steirodontini, Tettigoniidae.

ABSTRACT. A new material on the genera *Ischyra* Brunner-Wattenwyl, 1878, *Tropicophyllum* Koçak et Kemal, 2008, *Tuaia* Mendes et al., 2020, *Microcentrum* Scudder, 1862, *Acropsis* Uvarov, 1939 and *Philophyllia* Stål, 1873 from the subtribe Microcentrina (Steirodontini) as well as on the genera *Syntechna* Brunner-Wattenwyl, 1878 and *Problemovapex* **gen.n.** from the subtribe Stilpnochlorina **subtrib.n.** of the same tribe is considered. Diagnostic characters and composition of these subtribes and genera as well as systematic position of the genera *Apoballa* Brunner-Wattenwyl, 1878 and *Petaloptera* Saussure, 1859 are briefly discussed. The following lower new taxa (39) are also described: *Ischyra* (*Acrephyllum* **stat.n.**) *peruensis* **sp.n.** from Peru; *I.* (*A.*) *minutissima* **sp.n.** from Peru; *I.* (*A.*) *guyanensis* **sp.n.** from French Guiana; *I.* (*Hyalipenna* **stat.n.**) *clara* **sp.n.** from Peru; *I.* (*Ultraischyra* **subgen.n.**) *daedala* **sp.n.** from Peru; *I.* (*Caauara* **stat.n.**) *obliqua* **sp.n.** from Peru; *I.* (*C.*) *reticulata* **sp.n.** from Peru; *I.* (*C.*) *implaculata* **sp.n.** from Peru; *I.* (*Anapolisia* **stat.n.**) *fracta* **sp.n.** from Peru; *I.* (*A.*) *semifracta* **sp.n.** from Peru; *I.* (*A.*) *simplicissima* **sp.n.** from Peru; *I.* (*A.*) *simillima* **sp.n.** from Peru; *I.* (*A.*) *placulata* **sp.n.** from Peru; *Tropicophyllum* (*Prorossophyllum* **subgen.n.**); *Tuaia* (*Tuaia*) *pilosa* **sp.n.** from Peru; *Microcentrum* (*Carnavalia* **stat.n.**) *philammon tuxtlas* **subsp.n.** from Mexico; *M.* (*C.*) *grandiplacula* **sp.n.** from Peru; *M.* (*C.*) *morona* **sp.n.** from Ecuador; *M.* (*C.*) *miniplacula* **sp.n.** from Peru; *M.* (*C.*) *latistylus* **sp.n.** from Peru; *M.* (*Microcentrum*) *jalisco* **sp.n.** from Mexico; *M.* (*M.*) *sympatricum* **sp.n.** from Mexico; *M.* (*M.*) *xerophilum* **sp.n.** from Ecuador; *M.* (*M.*) *selva* **sp.n.** from Mexico; *M.* (*M.*) *lacandonense* **sp.n.** from Mexico; *M.* (*M.*) *nitidum* **sp.n.** from Peru; *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** from Peru; M. (*Rotundovapex* **subgen.n.**); *M.* (*R.*) *tamaulipas* **sp.n.** from Mexico; *M.* (*R.*) *foliolum* **sp.n.** from Costa Rica; *M.* (*Paradoxirostrum* **subgen.n.**) *ornatum* **sp.n.** from Mexico; *M.* (*Securicercus* **subgen.n.**); *M. gracilissimum* **sp.n.** from Honduras; *Acropsis meridiana* **sp.n.** from Peru; *Philophyllia ingens magdalenae* **subsp.n.** from Colombia; *Syntechna longitegminalis* **sp.n.** from Peru; *Problemovapex nicaraguensis* **gen. et sp.n.** from Nicaragua. The generic names *Acrephyllum* Piza, 1973 and *Carnavalia* Koçak et Kemal, 2008 are restored from synonymy with *Microcentrum* for subgenera of *Ischyra* and of *Microcentrum*, respectively; the former genera *Anapolisia* Piza, 1980, *Hyalipenna* Mendes et al., 2020, *Caauara* Mendes et al., 2020, *Capanema* Mendes et Rafael, 2021 and *Capiguara* Mendes et al., 2020 are considered as subgenera of *Ischyra* (the first three), of *Tropicophyllum* (*Capanema* **stat.n.**) and of *Tuaia* (*Capiguara* **stat.n.**); the generic names *Ctenophlebia* Stål, 1874, **syn.n.** and *Boroseiyela* Mendes et al., 2020, **syn.n.** are synonymized with *Microcentrum* s.str.; the species names *Rossophyllum clausum* Grant, 1958 and *Parableta bicentenaria* Piza, 1968 are restored from synonymy with *Tropicophyllum zonatum* (Giglio-Tos, 1898) and *Microcentrum lanceolatum* (Burmeister, 1838), respectively, but for the subspecies

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*T. z. clausum* (Grant, 1958), **stat.n.** and for the distinct species *M. bicentenarium* (Piza, 1968), **sp.dist.**; the new name *M. stridulans* **nom.n.** is supposed for *M. myrtifolium* Saussure et Pictet, 1898, because the latter name is a secondary homonym of *M. myrtifolium* (Linnaeus, 1758); the lectotypes for *M. angustatum* Brunner-Wattenwyl, 1878 and *S. olivaceoviridis* Brunner-Wattenwyl, 1878 as well as the neotype for *M. totonacum* (Saussure, 1859) are designated.

РЕЗЮМЕ. Рассмотрен новый материал по родам *Ischyra* Brunner-Wattenwyl, 1878, *Tropicophyllum* Koçak et Kemal, 2008, *Tuaia* Mendes et al., 2020, *Microcentrum* Scudder, 1862, *Acropsis* Uvarov, 1939 и *Philophyllia* Stål, 1873 из подтрибы Microcentrina (Steirodontini), а также по родам *Syntechna* Brunner-Wattenwyl, 1878 и *Problemovapex* **gen.n.** из подтрибы Stilpnochlorina **subtrib.n.** той же трибы. Кратко обсуждены диагностические признаки и состав этих подтриб и родов, а также систематическое положение родов *Apoballa* Brunner-Wattenwyl, 1878 и *Petaloptera* Saussure, 1859. Описаны также следующие более низкие новые таксоны (39): *Ischyra* (*Acrephyllum* **stat.n.**) *peruensis* **sp.n.** из Перу; *I.* (*A.*) *minutissima* **sp.n.** из Перу; *I.* (*A.*) *guyanensis* **sp.n.** из Французской Гвианы; *I.* (*Hyalipenna* **stat.n.**) *clara* **sp.n.** из Перу; *I.* (*Ultraischyra* **subgen.n.**) *daedala* **sp.n.** из Перу; *I.* (*Caauara* **stat.n.**) *obliqua* **sp.n.** из Перу; *I.* (*C.*) *reticulata* **sp.n.** из Перу; *I.* (*C.*) *implaculata* **sp.n.** из Перу; *I.* (*Anapolisia* **stat.n.**) *fracta* **sp.n.** из Перу; *I.* (*A.*) *semifracta* **sp.n.** из Перу; *I.* (*A.*) *simplicissima* **sp.n.** из Перу; *I.* (*A.*) *similima* **sp.n.** из Перу; *I.* (*A.*) *placulata* **sp.n.** из Перу; *Tropicophyllum* (*Prorossophyllum* **subgen.n.**); *Tuaia* (*Tuaia*) *pilosa* **sp.n.** из Перу; *Microcentrum* (*Carnavalia* **stat.n.**) *philammon tuxtlas* **subsp.n.** из Мексики; *M.* (*C.*) *grandiplacula* **sp.n.** из Перу; *M.* (*C.*) *morona* **sp.n.** из Эквадора; *M.* (*C.*) *miniplacula* **sp.n.** из Перу; *M.* (*C.*) *latistylus* **sp.n.** из Перу; *M.* (*Microcentrum*) *jalisco* **sp.n.** из Мексики; *M.* (*M.*) *sympatricum* **sp.n.** из Мексики; *M.* (*M.*) *xerophilum* **sp.n.** из Эквадора; *M.* (*M.*) *selva* **sp.n.** из Мексики; *M.* (*M.*) *lacandonense* **sp.n.** из Мексики; *M.* (*M.*) *nitidum* **sp.n.** из Перу; *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** из Перу; M. (*Rotundovapex* **subgen.n.**); *M.* (*R.*) *tamaulipas* **sp.n.** из Мексики; *M.* (*R.*) *foliolum* **sp.n.** из Коста Рики; *M.* (*Paradoxirostrum* **subgen.n.**) *ornatum* **sp.n.** из Мексики; *M.* (*Securicercus* **subgen.n.**); *M. gracilissimum* **sp.n.** из Гондураса; *Acropsis meridiana* **sp.n.** из Перу; *Philophyllia ingens magdalenae* **subsp.n.** из Колумбии; *Syntechna longitegminalis* **sp.n.** из Перу; *Problemovapex nicaraguensis* **gen. et sp.n.** из Никарагуа. Родовые названия *Acrephyllum* Piza, 1973 и *Carnavalia* Koçak et Kemal, 2008 восстановлены из синонимии с *Microcentrum* для подродов в составе *Ischyra* и *Microcentrum* соответственно; бывшие роды *Anapolisia* Piza, 1980, *Hyalipenna* Mendes et al., 2020, *Caauara* Mendes et al., 2020, *Capanema* Mendes et Rafael, 2021 и *Capiguara* Mendes et al., 2020 трактуются как подроды *Ischyra* (the first three), *Tropicophyllum* (*Capanema* **stat.n.**) и *Tuaia* (*Capiguara* **stat.n.**); родовые названия *Ctenophlebia* Stål, 1874, **syn.n.** и *Boroseiyela* Mendes et al., 2020, **syn.n.** синонимизированы с *Microcentrum* s.str.; видовые названия *Rossophyllum clausum* Grant, 1958 и *Parableta bicentenaria* Piza, 1968 восстановлены из синонимии с *Tropicophyllum zonatum* (Giglio-Tos, 1898) и *Microcentrum lanceolatum* (Burmeister, 1838) соответственно, но для подвида *T. z. clausum* (Grant, 1958), **stat.n.** и вида *M. bicentenarium* (Piza, 1968), **sp.dist.**; новое название *M. stridulans* **nom.n.** предложено для *M. myrtifolium* Saussure et Pictet, 1898, поскольку последнее название — вторичный гомоним *M. myrtifolium* (Linnaeus, 1758); обозначены лектотипы для *M. angustatum* Brunner-Wattenwyl, 1878 и *S. olivaceoviridis* Brunner-Wattenwyl, 1878, а также неотип для *M. totonacum* (Saussure, 1859).

## Introduction

This communication is the thirteenth one in the series of my publications on the American Tettigoniidae. It continues my previous communication [Gorochov, 2025] on the tribe Steirodontini, one of largest tribes of Phaneropterinae which includes large and medium-sized katydids living mainly in the crowns of trees and bushes in tropical forests and partly imitating their leaves.

In the above-mentioned paper, this tribe was divided into a few subtribes which had previously been considered as separate tribes: Steirodontina, Microcentrina and Aegimiina. Here, the Steirodontini is supplemented by the subtribe Stilpnochlorina **subtrib.n.**

This work was carried out within the framework of large projects on the invertebrate fauna of the Amazon Basin (numbers Pi005 and Pi009, PAE ACRENAP 2019-2030) under the supervision of the Peruvian and Ukrainian entomologist V.V. Izerskyy (NGO ACRENAP, UNFCCC Observer, dep. RINGO — scientific research and ENGO — environment).

## 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 Leica MZ 16 and Nikon SMZ 1270 stereomicroscopes. The online catalogue Orthoptera Species File [Cigliano *et al*., 2025] is here cited as OSF.

## Taxonomic part

Subfamily Phaneropterinae Burmeister, 1838
Tribe Steirodontini Brunner-Wattenwyl, 1878

NOTE. The beginning of a new understanding of this tribe has been laid only recently [Gorochov, 2025]. The Steirodontini is treated as a big group of Phaneropterinae including numerous rather large or medium-sized katydids living mainly on trees in tropical forests and partly imitating the leaves of these trees. These katydids are more or less characterized by the following features: the tegminal stridulatory apparatus is partly or almost completely hidden among the dense crossve-

nation in the left tegmen (except for the stridulatory vein and often the nearest vein which are usually thickened and well separated from this crossvenation), but in the right tegmen, this apparatus is well developed and partly membranous as well as usually with a distinct mirror; the legs often have partly widened and flattened tibiae; the cerci are usually (but not always) arcuate and with 1–2 small apical denticles; the male genital plate is with more or less distinct styles and a notch between them; the male genitalia are membranous.

But it is necessary to mention that these characters cannot be used as diagnostic, because many groups of Phaneropterinae are insufficiently studied in relation to their systematic position, and part of them (including some groups now considered as tribes) may belong to Steirodontini or have convergent similarity. Thus, we can move in this direction step by step, and now only two former tribes and two other suprageneric groups are assigned to the Steirodontini as its subtribes: Steirodontina, Microcentrina, Aegimiina and Stilpnochlorina **subtrib.n.** Moreover, most part of these and similar (possibly related) groups require additional study of their generic and species composition. And some papers, published during the last few years, support this opinion. For example, in 2014–2025 the following interesting papers with descriptions of new American taxa were published: Cadena-Castañeda [2014, 2015, 2016]; Sovano, Cadena-Castañeda [2015]; Cadena-Castañeda *et al*. [2016]; Mendes *et al*. [2020, 2023]; Mendes, Rafael [2020, 2021a, b, 2025].

With regard to Microcentrini, the most interesting of these are the papers by Mendes with coauthors. These papers show that these Brazilian authors have a keen eye for the small morphological characters, important for generic and species taxonomy, and are able to make beautiful illustrations (such illustrations are most important for our taxomonic work). However, their papers have one important problem: the homology of the wing veins in these papers originates from the erroneous nomenclature of Desutter-Grandcolas [2003] who in 2003 had insufficient knowledge in wing venation and became confused about the homology of the complex wing venation in fossil and recent orthopteroid insects. This erroneous homology was used by Dias *et al*. [2012] but later corrected by Gorochov [2014] who based his opinion on the long history of wing venation study in fossil and recent insects [Zeuner, 1939; Ragge, 1955; Sharov, 1968, Gorochov, 1995; Rasnitsyn, Quicke, 2002]. Here I provide a scheme of the most grounded wing venation nomenclature (Figs 1, 2) which, I hope, may help my colleagues in their further work (a more detailed basis for this nomenclature is given in the cited paper by Gorochov [2014]). It is useful to note than another recent Brazilian orthopterist [Fianco, 2023] used the wing venation terminology more similar to my views.

## Subtribe Microcentrina Brunner-Wattenwyl, 1878

= Microcentra Brunner-Wattenwyl, 1878

= Ctenophlebiae Brunner-Wattenwyl, 1878

NOTE. This American subtribe is mainly characterized by the specialized structure of the ovipositor which is rather short, strongly curved upwards near its base and having a widely rounded (almost obtusely angular) or roundly truncated apex with small but distinct denticles located dorsally and apically on the upper valves as well as only apically on the lower valves (Figs 3, 4). In OSF, the following taxa with such ovipositor are included in the former tribe Microcentrini (now this "tribe" is equated to the subtribe Microcentrina) as its genera: *Microcenrum* Scudder, 1862; *Ctenophlebia* Stål, 1873; *Ischyra* Brunner-Wattenwyl, 1878; *Lamprophyllum* Hebard, 1924; *Anapolisia* Piza, 1980; *Tropicophyllum* Koçak et Kemal, 2008; *Boroseiyla*, *Caauara*, *Capiguara*, *Hyalipenna* and *Tuaia* described by Mendes, Chamorro-Rengifo and Rafael in 2020; *Tukunha* Mendes et Rafael, 2021. Here these taxa are treated somewhat differently: some of them are considered as subgenera of *Ischyra* Brunner-Wattenwyl, 1878 (*Anapolisia*, *Caauara*, *Hyalipenna*) and of *Tuaia* (*Capiguara*); *Ctenophlebia* and *Boroseiyla* are synonymized with *Microcentrum* s.str.

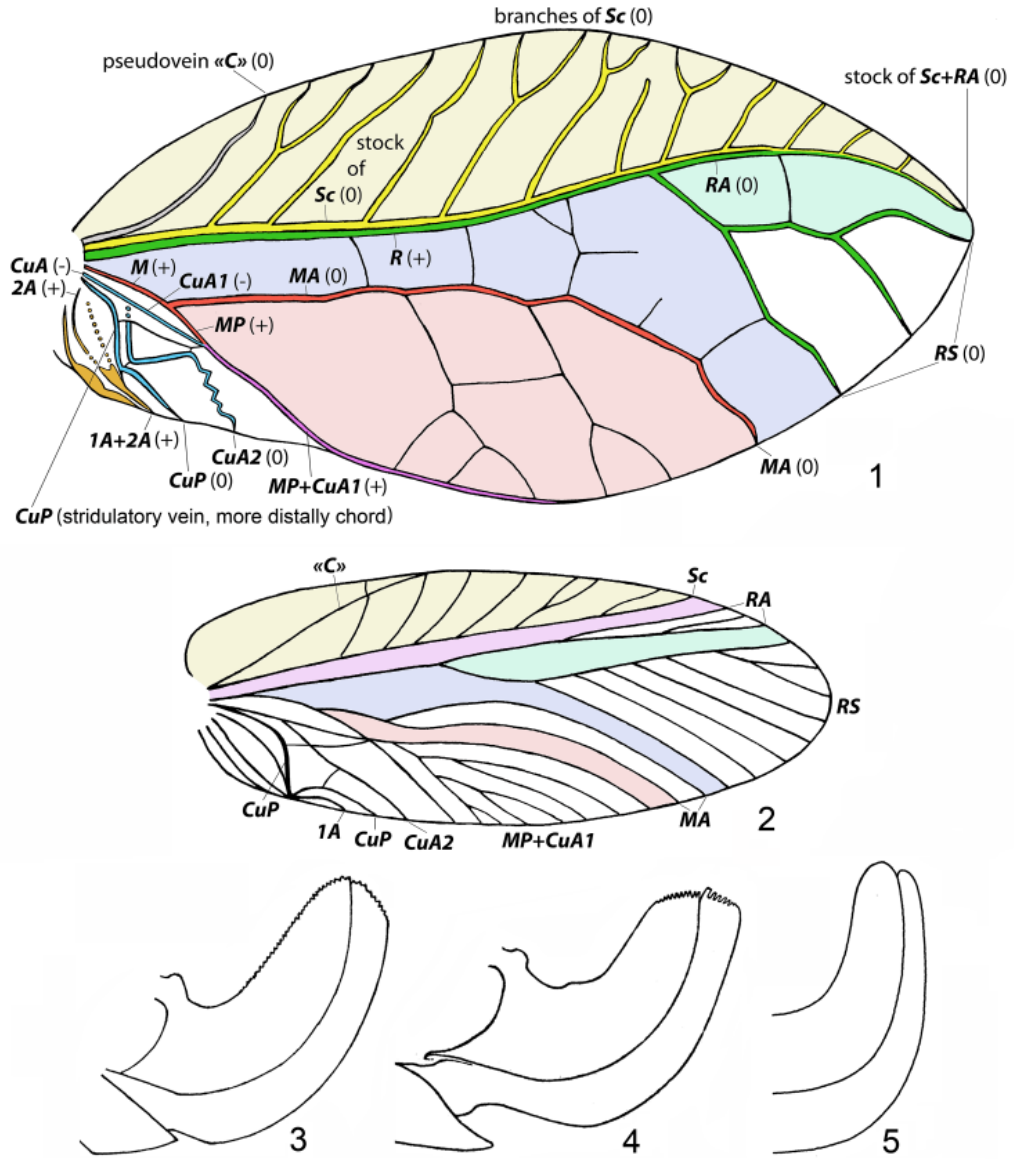
However, some other taxa included by OSF in "Microcentrini" have their ovipositor lacking any denticles (partly reduced; Fig. 5) and more or less similar to that of the subtribe Steirodontina (*Petaloptera* Saussure, 1859; *Lobophyllum* Saussure, 1859; *Philophyllia* Stål, 1873; *Syntechna* Brunner-Wattenwyl, 1878; *Apoballa* Brunner-Wattenwyl, 1878; *Phoebolampta* Brunner-Wattenwyl, 1878; *Acropsis* Uvarov, 1939; *Raggophyllum* Nickle, 1967), or their females are unknown (*Capanema* Mendes et Rafael, 2021). The assignment of these taxa to Microcentrina is sometimes problematic. On the one hand, they may really belong to Microcentrina, because the loss of ovipositor denticles may be a rapid process due to the transition to open oviposition on the surface of branches or leaves (as in the subtribes Steirodontina and Stilpnochlorina **subtrib.n.**; Figs 6, 7), but on the other hand, similarly reduced ovipositors may originate from different types of ovipositors with sawing denticles.

For such a reduction, at least three possible paths are assumed. *Lobophyllum*, *Acropsis*, *Philophyllia* and *Capanema* are similar to the true Microcentrina in some other features, and the partly reduced ovipositors in some of them are or may be derived from those of the Microcentrina type; an intermediate stage between the normal ovipositor for Microcentrina and the partly reduced one is represented in *Tukunha* and *Lamprophyllum* as well as in some representatives of *Ischyra* and *Tropicophyllum* which have the ovipositor with only a few very small denticles at the apex (Fig. 458), but the ovipositor in one subgenus (or possibly in two subgenera) of *Ischyra* and in the type species of *Tropicophyllum* lacks any denticles (Fig. 5). The genera *Syntechna*, *Apoballa* and *Petaloptera* are more similar to *Stilpnochlora* Stål, 1873 (the first genus) or to each other (the two rest genera); it is most probable that *Syntechna* belongs to a new subtribe (Stilpnochlorini **subtrib.n.**) containing also *Stilpnochlora* and *Nicklephyllum* Cadena-Castañeda, 2016 [Gorochov, 2025] as well as a possible new genus, and that *Apoballa* and *Petaloptera* belong to another subtribe (but the latter hypothesis is in need of additional study). For *Raggophyllum* and *Phoebolampta*, the subtribal position is currently very unclear.

## Genus *Ischyra* Brunner-Wattenwyl, 1878

Type species (in original binomen): *Ischyra punctinervis* Brunner-Wattenwyl, 1878, by subsequent designation [Kirby, 1906].

DIAGNOSIS. This genus characterized by following features: head with short and diversely wide rostral tubercles which pressed or almost pressed to each other and forming narrow transverse slit or thin groove between them (Figs 34, 37, 40, 43, 46, 49, 54, 57, 60, 63); pronotal disc more or less flat, with small angular or poorly distinct and rounded anteromedian projection, with a pair of shallow concavities on anterior edge around this projection and with widely rounded posterior edge usually having small posteromedian notch (Figs 35, 38, 41, 44, 47, 51, 52, 55, 58, 61, 64); pronotal lateral lobes higher than long, with slight but distinct vertical folds and rather deep rounded humeral notches as well as oblique (almost straight) or rounded ventral edges (Figs 36, 39, 42, 45, 48, 50, 56, 59, 62, 65); tegmina long (distinctly protruding beyond abdominal apex), more or less oval, diverse in width and venation, with

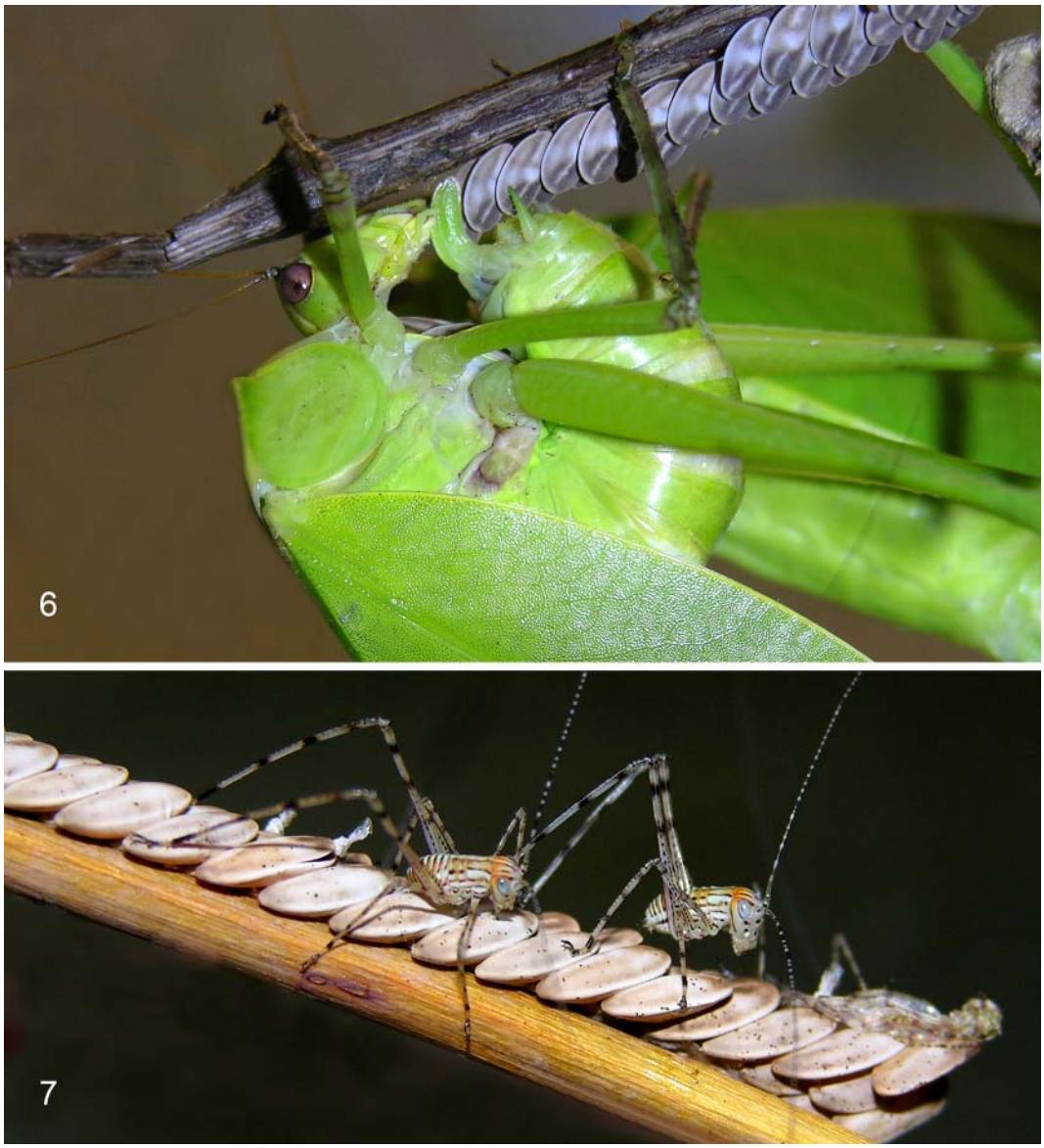



**Figs 1–5.** Schemes of wing venation and ovipositor: 1 — male tegmen of *Aegimia cultrifera* (Steirodontini: Aegimiina); 2 — male tegmen of Jurassic representative of Prophalangopsidae (Hagloidea) related to ancestor of Tettigonioidea; 3–5 — ovipositor of *Microcentrum* (*Rotundovapex* **subgen.n.**) *louisianum* (3), *M.* (*Microcentrum*) *rhombifolium* (4) and *Tropicophyllum* (*Tropicophyllum*) *zonatum clausum* (5) from side. Designations: *yellow* — stock and branches of Sc; *green* — same of R (including RA and RS); *red* — same of M (including MA and MP); *blue* — same of Cu (including CuA and CuP); *brown* — branches of A; *grey* — pseudovein "C" (secondary vein from parts of Sc branches and crossveins between them); *lilac* — MP+CuA1 (vein from MP and CuA1 fused with each other); *black* — crossveins and secondary branches from crossvenation (1), or all veins and crossveins (2); *light yellowish* — costal area (area between costal edge and Sc stock); *light lilac* — subcostal area (area between Sc and R); *light greenish* — interradial area (area between main branches of R: RA and RS); *light blue* — radial area (area between R and M); *rose* — intermedial area (area between main branches of M: MA and MP); (+), (-) or (0) — vein in positive, negative or neutral position in relation to plane of wing (see spread wing from above); *dots (small circles)* — lost parts of veins. 1 — after: Gorochov [2014], modified; 2 — after: Sharov [1968], modified; 3 — after: Spooner [1986]; 4 — after: Vickery, Kevan [1983]; 5 — after: Grant [1958].

**Рис. 1–5.** Схемы крылового жилкования и яйцеклада: 1 — надкрылье самца *Aegimia cultrifera* (Steirodontini: Aegimiina); 2 — надкрылье самца юрского представителя Prophalangopsidae (Hagloidea), близкого к предку Tettigonioidea; 3–5 — яйцеклад *Microcentrum* (*Rotundovapex* **subgen.n.**) *louisianum* (3), *M.* (*Microcentrum*) *rhombifolium* (4) и *Tropicophyllum* (*Tropicophyllum*) *zonatum clausum* (5) сбоку. Обозначения: *желтым* — ствол и ветви Sc; *зеленым* — то же для R (включая RA и RS); *красным* — то же для M (включая MA и MP); *голубым* — то же для Cu (включая CuA и CuP); *коричневым* — ветви A; *серым* — псевдожилка "C" (вторичная жилка из частей ветвей Sc и поперечных жилок между ними); *фиолетовым* — MP+CuA1 (жилка из MP и CuA1, слитых одна с другой); *черным* — поперечные жилки и вторичные ветви из поперечных жилок (1), или все продольные и поперечные жилки (2); светло-желтым — костальное поле (поле между костальным краем и стволом Sc); *светло-фиолетовым* — субкостальное поле (поле между Sc и R); *светло-зеленым* — интеррадиальное поле (поле между главными ветвями R: RA и RS); *светло-голубым* — радиальное поле (поле между R и M); *розовым* — интермедиальное поле (поле между главными ветвями M: MA и MP); (+), (-) или (0) — жилка в выпуклом, вогнутом или нейтральном положениях относительно плоскости крыла (см. на расправленное крыло сверху); *точки (мелкие кружки)* — утерянные части жилок. 1 — по: Gorochov [2014] с изменениями; 2 — по: Sharov [1968] с изменениями; 3 — по: Spooner [1986]; 4 — по: Vickery, Kevan [1983]; 5 — по: Grant [1958].

area between RA and proximal part of RS very narrow, with RS divided into two branches not far from its base (anterior branch of RS with short proximal part running along RA very near it, and with more distal part roundly curved near RA and directed more or less distomedially; posterior branch of RS directed similarly but from its base; Figs 8–25), with cell membranes in lateral fields often rather large and more or less transparent (usually these membranes larger near longitudinal veins and smaller in middle part of areas between veins; Figs 69, 71, 73, 75–86), and with male left tegmen having stridulatory vein ventrally almost straight, slightly arcuate or somewhat broken (Figs 70, 72, 74, 120–129) but not distinctly sinuate; legs moderately long and thin (with large flattened widening only in proximal part of fore tibia; Figs 139–141), and with a pair of oval open tympanums of same size on each fore tibia (Figs 139, 140); abdomen with male last tergite almost truncated posteriorly, with cerci moderately long and thin as well as straight but roundly curved upwards and medially in distal parts (each cercus with heavily sclerotized small apical denticle or two such denticles), and with male genital plate having not very deep posteromedian notch and distinct styles around it (Figs 162–190); male genitalia completely membranous; ovipositor (Figs 198, 200, 202, 204, 206, 208, 210) short, strongly curved upwards and with almost transversely truncated apices of lower valves having a row of small denticles on each of these apices (but these denticles sometimes reduced or absent).

COMPOSITION. Six subgenera and 52 species listed in subgeneric key below:




**Figs 6, 7.** Oviposition of *Stilpnochlora* sp.: 6 — female in process of laying eggs; 7 — open clutch of eggs on small branch, with newborn nymphs. Photographs by M. Berezin.

**Рис. 6, 7.** Яйцекладка *Stilpnochlora* sp.: 6 — самка в процессе откладки яиц; 7 — открытая кладка яиц на маленькой веточке и новорожденные личинки. Фотографии М. Березина.

1. Tegmina with Sc branches directed mainly distocostally (distolaterally; Figs 8–15, 25, 69, 71, 73, 81, 82) ..... 2
– Tegmina with Sc branches directed mainly costally (laterally; Figs 16–22, 75–80) or proxicostally (proxilaterally; Figs 23, 24, 83–86) ..... 4
2. Head with distance between antennal cavities 1–1.5 times as great as width of scape, and with upper rostral tubercle having distinct dorsoapical concavity (Figs 34, 35, 37, 38, 49); tegmina narrow (Figs 8–14, 69, 71, 73); ovipositor with denticles at apex (Figs 198, 200) or unknown .....subgenus ***Acrephyllum*** Piza, 1973, **stat.n.** (= *Malkinia* Piza, 1976) [Included species (in original binomen): *Ischyra brasiliensis* Piza, 1950 (Brazil; Fig. 10); *Acrephyllum irregulare* Piza, 1973 (North Brazil; Fig. 14) — type species of *Acrephyllum*; *Malkinia gurupi* Piza, 1976 (North Brazil; Fig. 13) — type species of *Malkinia*; *I. walkeri* Cadena-Castañeda, 2015 (Colombia; Fig. 11); *I.* (*Acrephyllum*) *peruensis* **sp.n.**; *I.* (*A.*) *minutissima* **sp.n.**; *I.* (*A.*) *guyanensis* **sp.n.**; possibly *I. magna* Cadena-Castañeda, 2015 (Guatemala; Fig. 12).]
– Head with distance between antennal cavities 2–2.5 times as great as width of scape, and upper rostral tubercle without distinct dorsoapical concavity (sometimes this tubercle with 1–3 very shallow and thin grooves; Figs 60, 61, 63, 64); tegmina narrow or slightly widened (Figs 15, 25, 81, 82); ovipositor with denticles or without them..... 3
3. Tegmina narrow, without long preapical branches of RA, with RS branches almost straight and directed almost only distally, and with MA very long (Figs 25, 82); ovipositor with denticles at apex (Fig. 206) or unknown .....subgenus ***Hyalipenna*** Mendes, Chamorro-Rengifo et Rafael, 2020, **stat.n.** [Included species (in original binomen): *Hyalipenna tetralineata* Mendes, Chamorro-Rengifo et Rafael, 2020 (Brazil) — type species; *Ischyra* (*Hyalipenna*) *clara* **sp.n.**]
– Tegmina slightly widened, with 2–3 long preapical branches of RA, with RS branches strongly S-shaped, and with MA not very long (Figs 15, 81); ovipositor without denticles (approximately as in Fig. 5) or unknown .....subgenus ***Ultraischyra*** Gorochov, **subgen.n.** [Included species (in original binomen): *Ischyra* (*Ultraischyra*) *daedala* **sp.n.** — type species; *Anapolisia atlantica* Mendes et Rafael, 2025 (Brazil); *A. tucuruvi* Mendes et Rafael, 2025 (Brazil); *A. amazonica* Mendes et Rafael, 2025 (Brazil); possibly *A. lineola* Mendes et Rafael, 2025, *A. tepequem* Mendes et Rafael, 2025, *A. iuna* Mendes et Rafael, 2025, *A. gustavoi* Mendes et Rafael, 2025 and *A. tiquira* Mendes et Rafael, 2025 from Brazil.]
4. Head with distance between antennal cavities 2–2.5 times as great as width of scape (Figs 54, 57); tegmina narrow, with Sc branches directed mainly proxilaterally (proxiventrally in rest position), and with long preapical branches of RA, posterior RS branch and most part of anterior RS branch more or less obliquely straight (Figs 23, 24, 83–86); ovipositor with denticles at apex (Figs 208, 210) or unknown .....subgenus ***Caauara*** Mendes, Chamorro-Rengifo et Rafael, 2020, **stat.n.** [Included species (in original bunomen): *Caauara pinima* Mendes, Chamorro-Rengifo et Rafael, 2020 (Brazil) – type species; 8 similar species from Brazil described in "genus *Caauara*" by same authors in same puiblication (Mendes et al. 2020); *Ischyra* (*Caauara*) *obliqua* **sp.n.**; *I.* (*C.*) *reticulata* **sp.n.**; *I.* (*C.*) *implaculata* **sp.n.**]
– Head with distance between antennal cavities 2–5 times as great as width of scape; tegmina slightly or distinctly widened, with Sc branches directed mainly laterally (ventrally in rest position), with long preapical branches of RA and/or all branches of RS distinctly sinuate (Figs 16–22, 75–80) .....5
5. Head with distance between antennal cavities 2–2.5 times as great as width of scape (Figs 40, 41, 43, 44, 46, 47, 51, 52); ovipositor with denticles at apex (Figs 202, 204) or unknown ..... subgenus ***Anapolisia*** Piza, 1980, **stat.n.** [Included species (in original binomen): *Orophus planiceps* Walker, 1869 (Brazil; Fig. 22); *Anapolisia modesta* Piza, 1980 (Brazil; Fig. 18) — type species of *Anapolisia*; *Microcentrum micromargaritiferum* Piza, 1980 (Brazil; Fig. 17); *M. navigator* Piza, 1980 (North Brazil; Fig. 21); 11 remaining species from Brazil described in "genus *Anapolisia*" by Mendes and Rafael (2025); *Ischyra* (*Anapolisia*) *fracta* **sp.n.**; *I.* (*A.*) *semifracta* **sp.n.**; *I.* (*A.*) *simplicissima* **sp.n.**; *I.* (*A.*) *simillima* **sp.n.**; *I.* (*A.*) *placulata* **sp.n.**]
– Head with distance between antennal cavities 4–5 times as great as width of scape; ovipositor probably without denticles (Brunner-Wattenwyl, 1878) .....subgenus ***Ischyra*** s.str. [Included species (in original binomen): *Ischyra punctinervis* Brunner-Wattenwyl, 1878 (Brazil; Fig. 16) — type species of *Ischyra*.]

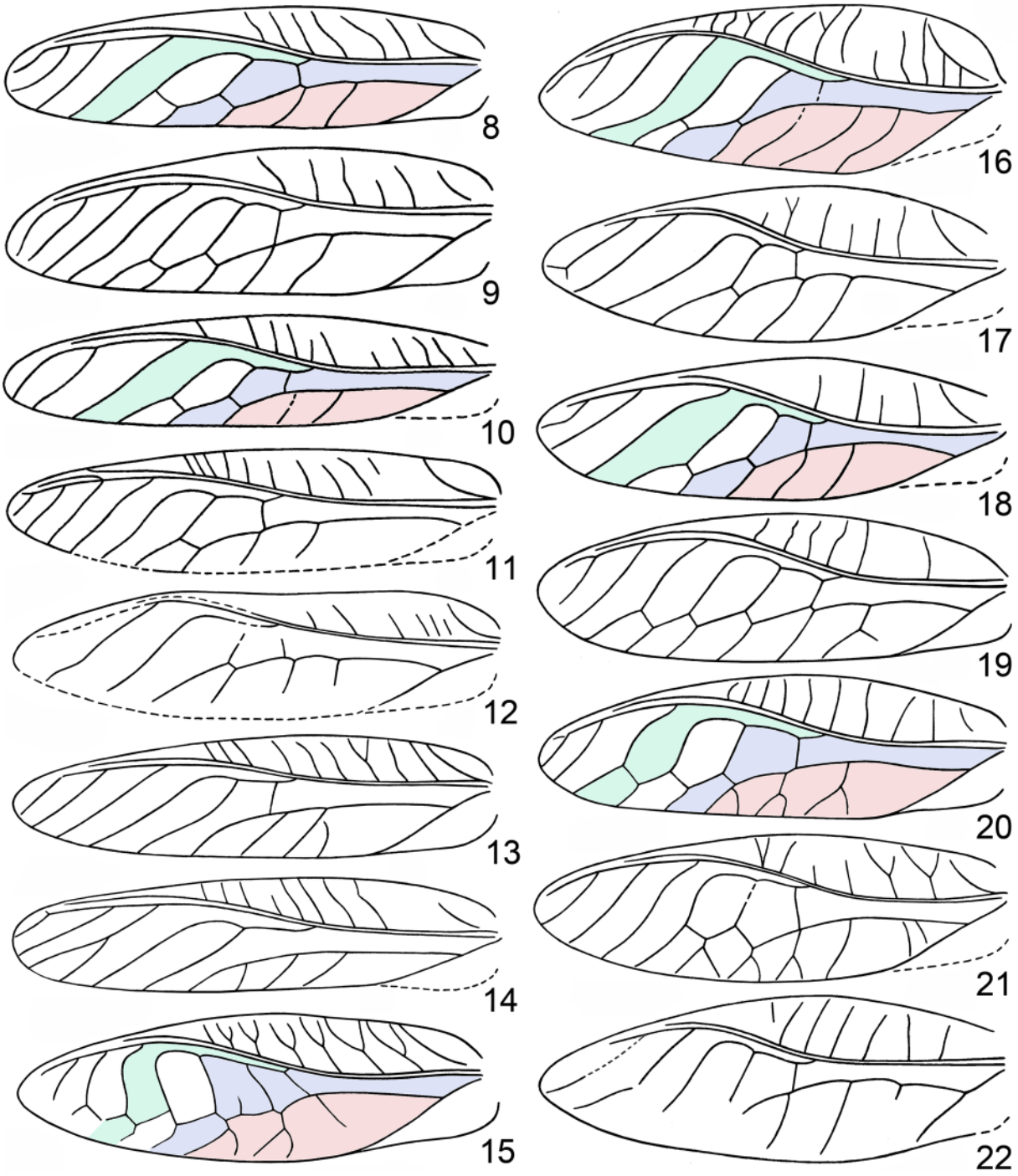
COMPARISON. This genus is most similar and probably related to the genus *Microcentrum* but distinguished by the following features: the tegmina are with some cell membranes in the lateral fields often distinctly larger than other ones (*vs* all these membranes usually are very small and more or less similar in size), and with the proximal portion of the interradial area (area between RA and RS) very narrow from its base to the place of the proximal bend of RS anterior branch (Figs 8–25); the male cercus is with the apical part more or less rounded and having 1–2 heavily sclerotized denticles at the apex (one of this denticle usually is keel-like) but lacking any distinct additional lobule near this apex (compare Figs 165, 167, 170, 173, 176, 178, 181, 183, 186, 189, 190).

REMARKS. For *I.* (*Acrephyllum*?) *magna*, Cadena-Castañeda [2015: figs 11, 12] indicated that its upper rostral tubercle ("fastigio") is almost trice as wide as its scape, but the photographs of this species head in this publication show that the distance between its antennal cavities is not more than 1.5 times as great as its scape width. Besides, some other species were included in the genus *Ischyra* by the previous authors (OSF), but they do not belong to this genus in reality: *Ischyra frutetorum* Saussure et Pictet, 1898 (Guatemala), *I. vepretorum* Saussure et Pictet, 1898 (Central America) and *I. policromica* Cadena-Castaneda, 2014 (Colombia) have the proximal part of the tegminal interradial area not as narrow as in *Ishyra* s.l. and its close relatives, and the male cercal apical part looking more similar to that of *Microcentrum*.

### *Ischyra* (*Acrephyllum*) *peruensis* Gorochov, **sp.n.**
Figs 8, 34–36, 69, 70, 90, 91, 162–165, 197, 198.

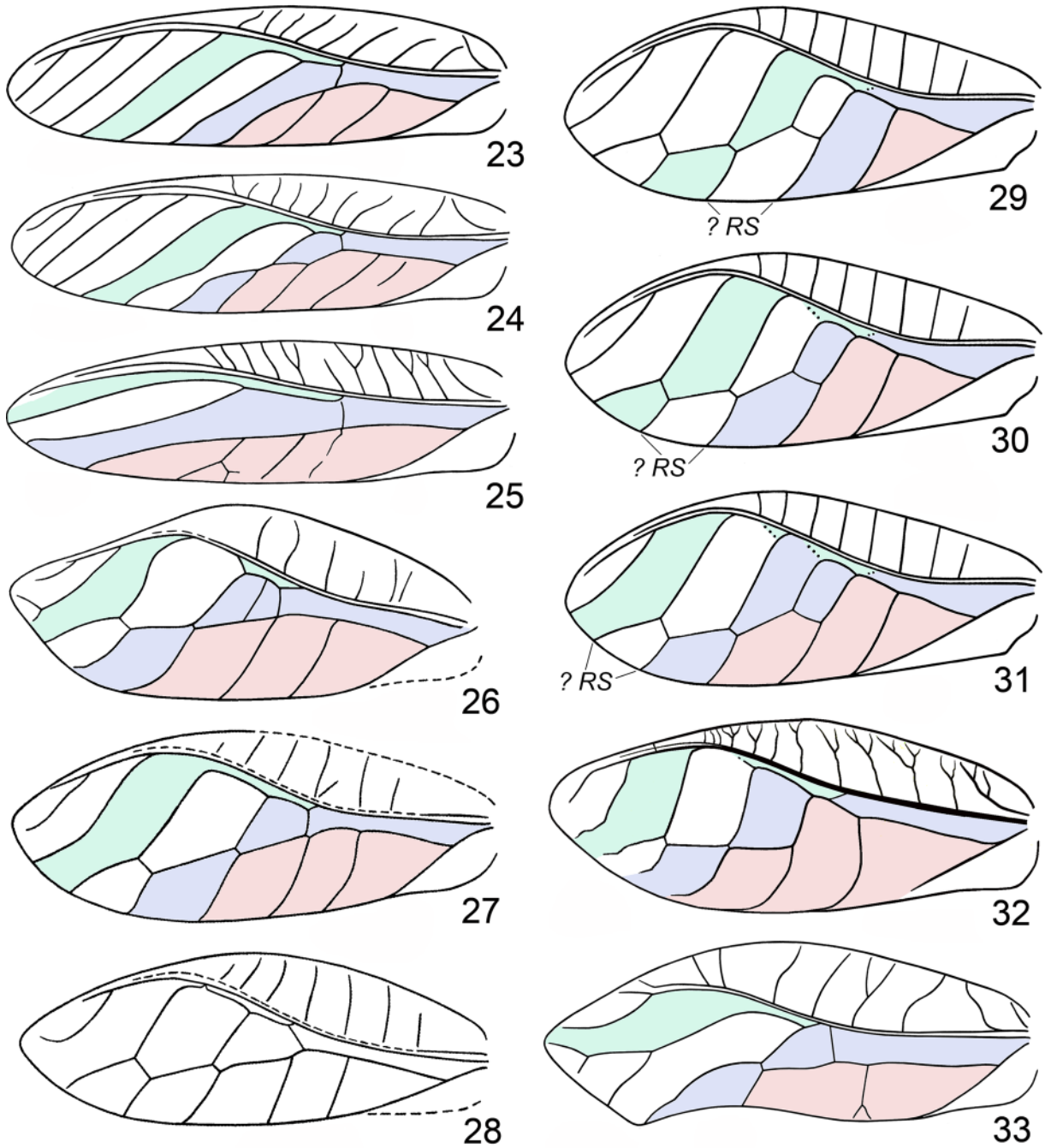
ETYMOLOGY. This species is named after the country (Peru) where it was collected.

MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 2 males, same data as for holotype (ZIN); 6 males, 1 female, same data, but 1000–1200 m, 5–9.XII.2017, A. Gorochov, G. Irisov (ZIN); 2 males, same province, ~40 km NE of Satipo Town, environs of Calabaza Vill., ~2000 m, primary forest, at light, 16–17.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, same province, Pampa Hermosa Distr., Cristal Waterfall near Pacasmayo Vill., 11º22´02´´ S, 74º41´55´´ W, 1400–1600 m, primary forest, at




**Figs 8–22.** *Ischyra*, schemes of male tegminal venation: 8 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (holotype); 9 — *I.* (*Ac.*) *guyanensis* **sp.n.**; 10 — *I.* (*Ac.*) *brasiliensis* (holotype); 11 — *I.* (*Ac.*) *walkeri*; 12 — *I.* (*Ac.*) *magna* (holotype); 13 — *I.* (*Ac.*) *gurupi* (holotype); 14 — *I.* (*Ac.*) *irregularis* (holotype); 15 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (holotype); 16 — *I.* (*Ischyra*) *punctipennis* (holotype); 17 — *I.* (*Anapolisia*) *micromargaritifera* (holotype); 18 — *I.* (*An.*) *modesta* (holotype); 19 — *I.* (*An.*) *fracta* **sp.n.** (holotype); 20 — *I.* (*An.*) *placulata* **sp.n.** (holotype); 21 — *I.* (*An.*) *navigator* (holotype); 22 — *I.* (*An.*) *planiceps* (holotype). Designations of areas between veins as in Figs 1–5. [10, 13, 14, 17, 18, 21, 22 — after photographs in: OSF; 11, 12 — after photographs in: Cadena-Castañeda [2015]; 16 — after: Brunner-Wattenwyl [1878], modified.]

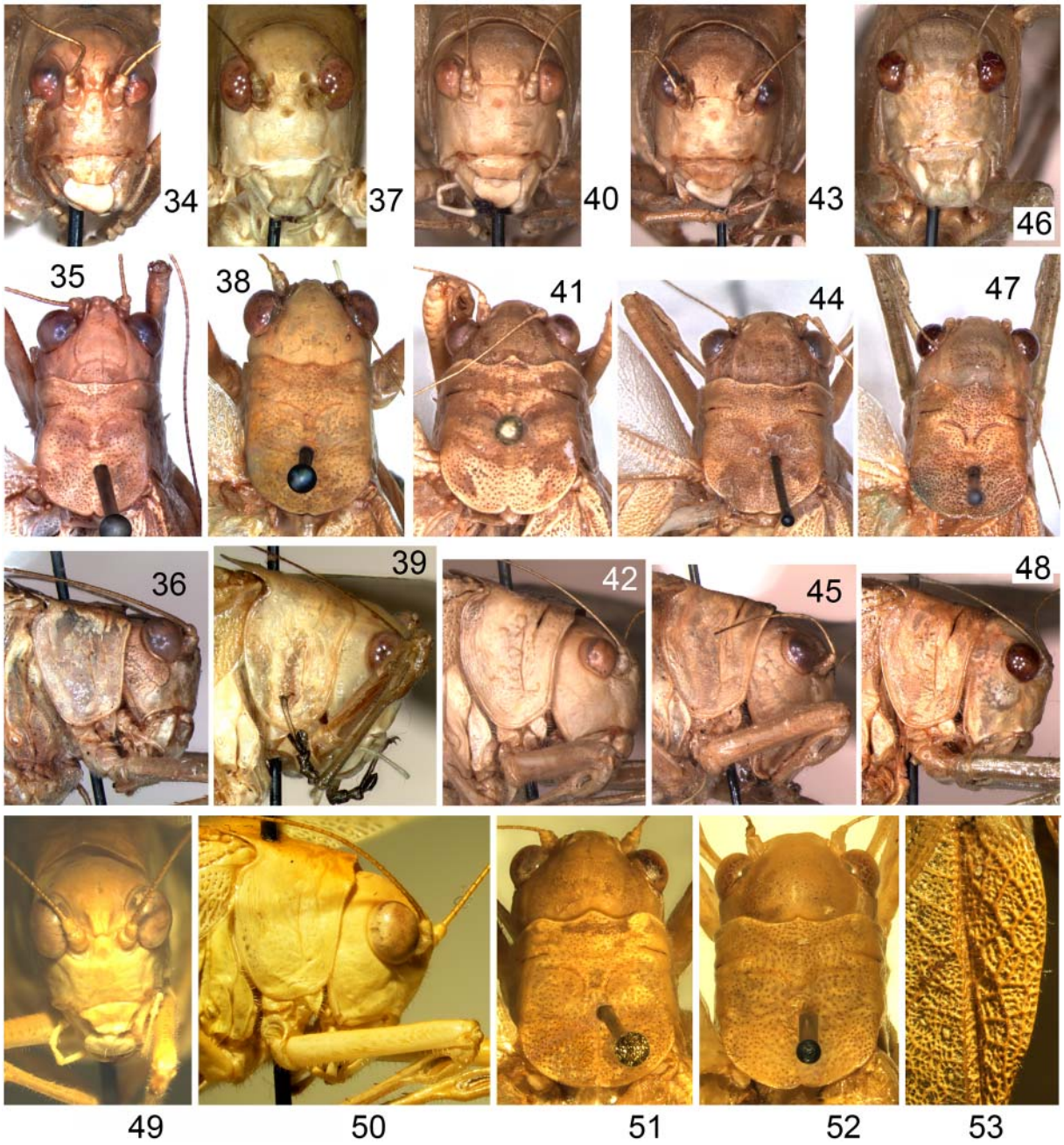
**Рис. 8–22.** *Ischyra*, схемы жилкования надкрылий самцов: 8 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (голотип); 9 — *I.* (*Ac.*) *guyanensis* **sp.n.**; 10 — *I.* (*Ac.*) *brasiliensis* (голотип); 11 — *I.* (*Ac.*) *walkeri*; 12 — *I.* (*Ac.*) *magna* (голотип); 13 — *I.* (*Ac.*) *gurupi* (голотип); 14 — *I.* (*Ac.*) *irregularis* (голотип); 15 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (голотип); 16 — *I.* (*Ischyra*) *punctipennis* (голотип); 17 — *I.* (*Anapolisia*) *micromargaritifera* (голотип); 18 — *I.* (*An.*) *modesta* (голотип); 19 — *I.* (*An.*) *fracta* **sp.n.** (голотип); 20 — *I.* (*An.*) *placulata* **sp.n.** (голотип); 21 — *I.* (*An.*) *navigator* (голотип); 22 — *I.* (*An.*) *planiceps* (голотип). Обозначения полей между жилками как на рис. 1–5. [10, 13, 14, 17, 18, 21, 22 — по фотографиям в: OSF; 11, 12 — по фотографиям из: Cadena-Castañeda [2015]; 16 — по: Brunner-Wattenwyl [1878] с изменениями.]




**Figs 23–33.** *Ischyra*, *Tropicophyllum* and *Tuaia*, schemes of male tegminal venation: 23 — *I.* (*Caauara*) *obliqua* **sp.n.** (holotype); 24 — *I.* (*C.*) *implaculata* **sp.n.** (holotype); 25 — *I.* (*Hyalipenna*) *clara* **sp.n.** (holotype); 26 — *Tr.* (*Prorossophyllum* **subgen.n.**) *maculosum*; 27 — *Tr.* (*P.*) *colosseum* (holotype); 28 — *Tr.* (*P.*) *sentum* (holotype); 29–31 — *Tr.* (*Tropicophyllum*) *zonatum clausum* (3 variants of homology for branches of RS and MA); 32 — *Tr.* (*Capanema*) *pocanga*; 33 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (holotype). Designations of areas between veins and of lost veins as in Figs 1–5. 26–28 — after photographs in: OSF; 32, after photograph in: Mendes, Rafael [2021b].

**Рис. 23–33.** *Ischyra*, *Tropicophyllum* и *Tuaia*, схемы жилкования надкрылий самцов: 23 — *I.* (*Caauara*) *obliqua* **sp.n.** (голотип); 24 — *I.* (*C.*) *implaculata* **sp.n.** (голотип); 25 — *I.* (*Hyalipenna*) *clara* **sp.n.** (голотип); 26 — *Tr.* (*Prorossophyllum* **subgen.n.**) *maculosum*; 27 — *Tr.* (*P.*) *colosseum* (голотип); 28 — *Tr.* (*P.*) *sentum* (голотип); 29–31 — *Tr.* (*Tropicophyllum*) *zonatum clausum* (3 варианта гомологии для ветвей RS и MA); 32 — *Tr.* (*Capanema*) *pocanga*; 33 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (голотип). Обозначения полей между жилками и утерянных жилок как на рис. 1–5. 26–28 — по фотографиям в: OSF; 32, по фотографии из: Mendes, Rafael [2021b].

light, 8–13.XII.2018, A. Gorochov (ZIN); 3 males, same country, Ucayali Department, Atalaya Prov., ~ 35 km NWW of Atalaya Town, environs of Sapani Vill., ~ 300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, 1 female, same country, Cusco Department (NW), environs of Miaria Vill. on Urubamba River, 11.33502º S, 72.99284º W, primary forest, at light, 8–11.X.2021, A. Gorochov (ZIN); 1 male, same department, La Convencion Prov. or Calca Prov., 50–55 km N of Quillabamba Town, environs of Huillcapampa Station of SER-

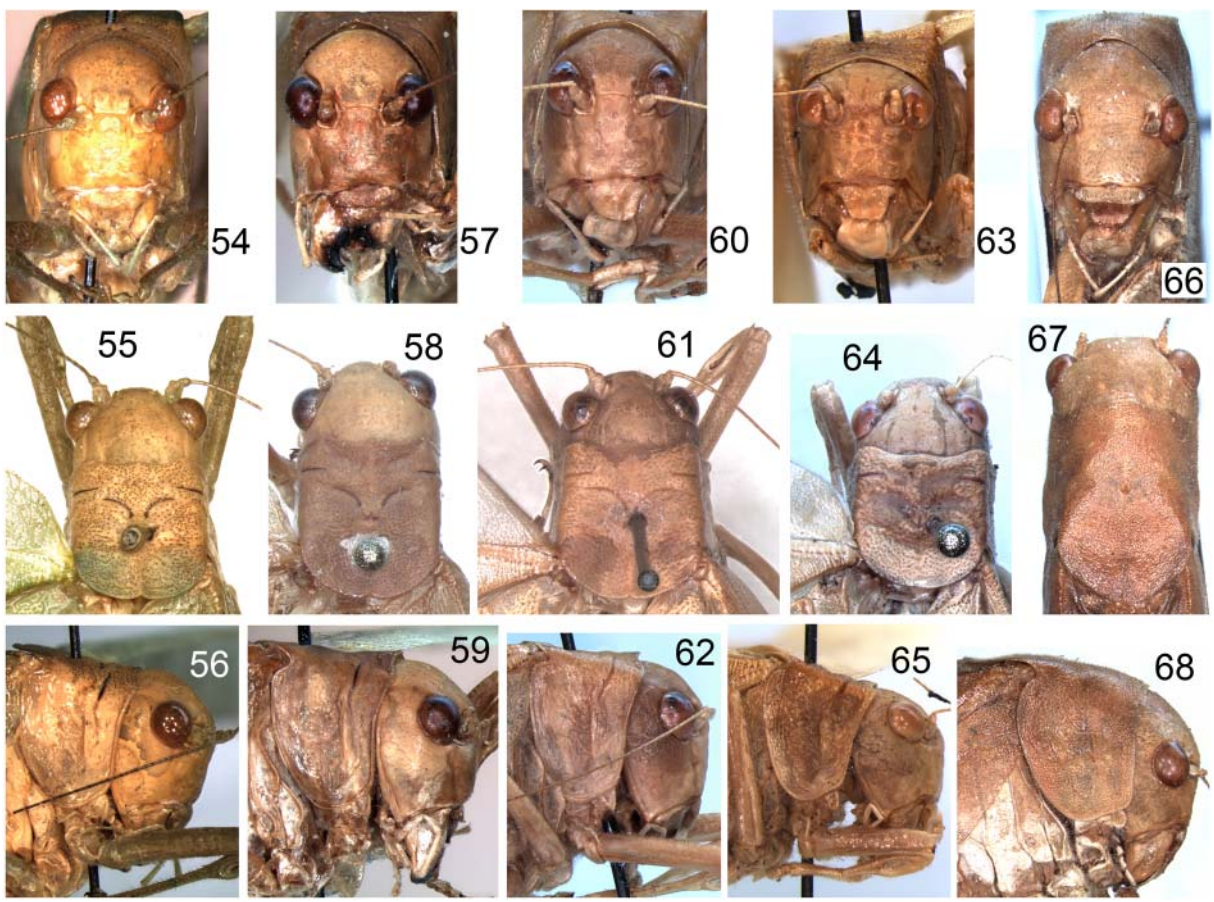



**Figs 34–53.** *Ischyra*, male (34–52) and female (53): 34–36 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (holotype); 37–39 — *I.* (*Ac.*) *guyanensis* **sp.n.**; 40–42 — *I.* (*Anapolisia*) *fracta* **sp.n.** (holotype); 43–45 — *I.* (*An.*) *simplicissima* **sp.n.** (holotype); 46–48 — *I.* (*An.*) *placulata* **sp.n.** (holotype); 49, 50 — *I.* (*Ac.*) *minutissima* **sp.n.** (holotype); 51 — *I.* (*An.*) *semifracta* **sp.n.**; 52 — *I.* (*An.*) *simillima* **sp.n.** (holotype); 53, *I.* (*Caauara*) *reticulata* **sp.n.** Head in front (34, 37, 40, 43, 46, 49); head with pronotum and fore legs or their parts from above (35, 38, 41, 44, 47, 51, 52) and from side (36, 39, 42, 45, 48, 50); dorsal field of left female tegmen (53).

**Рис. 34–53.** *Ischyra*, самец (34–52), самка (53): 34–36 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (голотип); 37–39 — *I.* (*Ac.*) *guyanensis* **sp.n.**; 40–42 — *I.* (*Anapolisia*) *fracta* **sp.n.** (голотип); 43–45 — *I.* (*An.*) *simplicissima* **sp.n.** (голотип); 46–48 — *I.* (*An.*) *placulata* **sp.n.** (голотип); 49, 50 — *I.* (*Ac.*) *minutissima* **sp.n.** (голотип); 51 — *I.* (*An.*) *semifracta* **sp.n.**; 52 — *I.* (*An.*) *simillima* **sp.n.** (голотип); 53, *I.* (*Caauara*) *reticulata* **sp.n.** Голова спереди (34, 37, 40, 43, 46, 49); голова с переднеспинкой и передними ногами или их частями сверху (35, 38, 41, 44, 47, 51, 52) и сбоку (36, 39, 42, 45, 48, 50); дорсальная плоскость левого надкрылья самки (53).

NANP, 12.34083º S, 72.65147º W, 600–800 m, primary forest, at light, 16–22.X.2021, A. Gorochov (ZIN); 1 male, same country, "Uchiza San Martin", 8º26.6′ S, 76º26.6′ W, 543 m, 18–19.II.2011, V. Sinyaev, A. Poleschuk (ZIN).

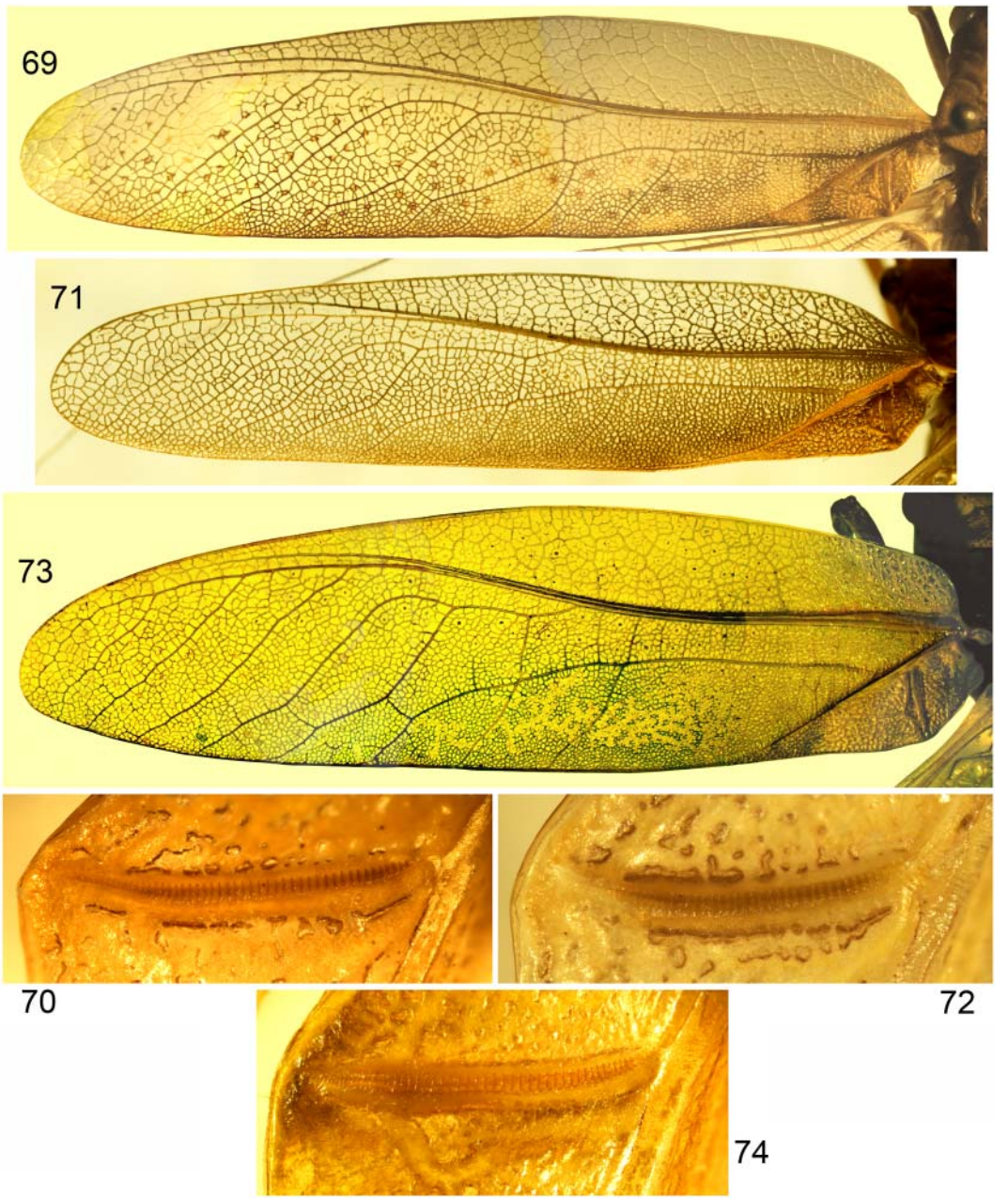
DESCRIPTION. *Male* (holotype). Body rather small for this genus; coloration uniformly light greenish but with light brown eyes and proximal part of antennal flagellum (but basal portion of this part yellowish), brown rest parts of this flagellum, blackish apical parts of mandibles, transparent most part of membranes in all wings as well as very small brown spots on some membranes between R and anal edge in lateral tegminal field (Figs 8, 69). Surfaces of head and pronotum more or less smooth and matte; rostral tubercles rather narrow (distance between antennal cavities almost as great as width of scape), with upper tubercle having distinct dorsomedian concavity between lateral ocelli (this concavity reaching apex of this tubercle in shape of short groove; Figs 34, 35), and with lower tubercle having widely rounded apex which slightly narrower than apex of previous tubercle (Fig. 34); pronotal disc with very small punctures, small angular anteromedian projection, a pair of very shallow concavities on anterior edge around this projection, rounded posterior edge and small angular posteromedian notch (Fig. 35); pronotal lateral lobes rather high and short, with oblique (but almost straight) ventral edges (Fig. 36). Tegmina rather narrow and long (strongly protruding beyond abdominal apex and beyond apices of hind femora), with following venation: cells between branches of RA and RS moderately large and almost equal in size; anterior branch of RS with rather sloping curvature, and its distal part as well as three branches of RA (except for small apical one) oblique but almost straight; Sc with main branches oblique but directed more or less distally; area between anal edge and MA moderately narrow; stridulatory apparatus with stridulatory vein of left tegmen having about 49 teeth (37 of them larger and probably participating in stridulation), and with thickened transverse crossvein (located very near this vein) interrupted in middle part (Figs 8, 69, 70, 90, 91). Hind wings somewhat longer than tegmina, and length of their distal part (exposed behind tegminal apex) nearby 4 mm. Abdomen with second–sixth tergites having small angular posteromedian projection, with sixth–seventh tergites having very small and roundly angular posteromedian one, and with last tergite almost truncated; epiproct, genital plate and cerci as in Figs 162 and 163, but each cercus with two small and dark apical denticles: medial one larger and rounded distally as well as angular posteriorly, lateral denticle very small and spinule-like (Fig. 165).




**Figs 54–68.** *Ischyra* and *Tuaia*, male: 54–56 — *I.* (*Caauara*) *obliqua* **sp.n.** (holotype); 57–59 — *I.* (*C.*) *implaculata* **sp.n.**; 60–62 — *I.* (*Hyalipenna*) *clara* **sp.n.** (holotype); 63–65 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (holotype); 66–68 — *T.* (*Tuaia*) *pilosa* **sp.n.** (holotype). Head in front (54, 57, 60, 63, 66); head with pronotum and fore legs or their parts from above (55, 58, 61, 64, 67) and from side (56, 59, 62, 65, 68).
**Рис. 54–68.** *Ischyra* и *Tuaia*, самец: 54–56 — *I.* (*Caauara*) *obliqua* **sp.n.** (голотип); 57–59 — *I.* (*C.*) *implaculata* **sp.n.**; 60–62 — *I.* (*Hyalipenna*) *clara* **sp.n.** (голотип); 63–65 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (голотип); 66–68 — *T.* (*Tuaia*) *pilosa* **sp.n.** (голотип). Голова спереди (54, 57, 60, 63, 66); голова с переднеспинкой и передними ногами или их частями сверху (55, 58, 61, 64, 67) и сбоку (56, 59, 62, 65, 68).

*Variations*. Some males with following peculiarities: darkened marks on tegmina light brown or barely distinct; RA branches in tegmina slightly less numerous (with two branches excepting apical one); RS in one tegmen or in both tegmina aberrant (with one of branches lost or reduced); second-third abdominal tergites having slightly longer angular projection, or third abdominal tergite having very short projection; number of stridulatory teeth in left tegmen and width of posteromedian notch in genital plate (compare Figs 163 and 164) insignificantly varied.

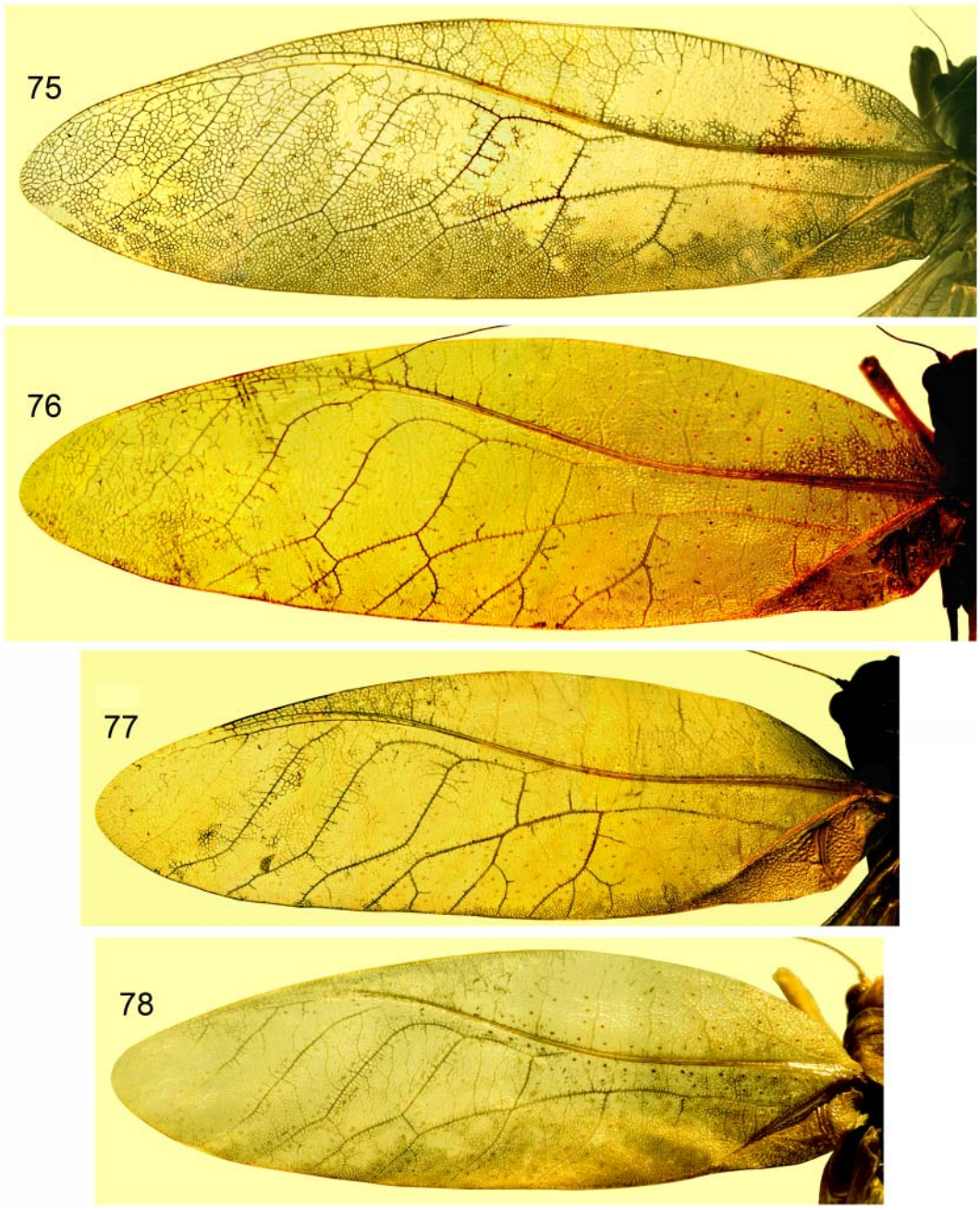
*Female*. General appearance as in males, but tegmina without normal (characteristic of male) stridulatory apparatus and with 3 more or less long RA branches (except for short apical one) as well as with hardly wider proximal part of interradial area, abdominal tergites without distinct posteromedian projections, cercus smaller and elongately conical as well as straight and with very thin apical part lacking denticle or denticles at apex, genital plate elongately triangular but with rounded apex as well as with lateral parts distinctly curved upwards and slightly laterally in relation to median part (Fig. 197, 198), and ovipositor as in Fig. 198.




**Figs 69–74.** *Ischyra* (*Acrephyllum*), male: 69, 70 — *I.* (*A.*) *peruensis* **sp.n.** (holotype); 71, 72 — *I.* (*A.*) *minutissima* **sp.n.** (holotype); 73, 74 — *I.* (*A.*) *guyanensis* **sp.n.** Left tegmen (69, 71, 73); stridulatory vein of left tegmen from below (70, 72, 74).
**Рис. 69–74.** *Ischyra* (*Acrephyllum*), самец: 69, 70 — *I.* (*A.*) *peruensis* **sp.n.** (голотип); 71, 72 — *I.* (*A.*) *minutissima* **sp.n.** (голотип); 73, 74 — *I.* (*A.*) *guyanensis* **sp.n.** Левое надкрылье (69, 71, 73); стридуляционная жилка левого надкрылья снизу (70, 72, 74).

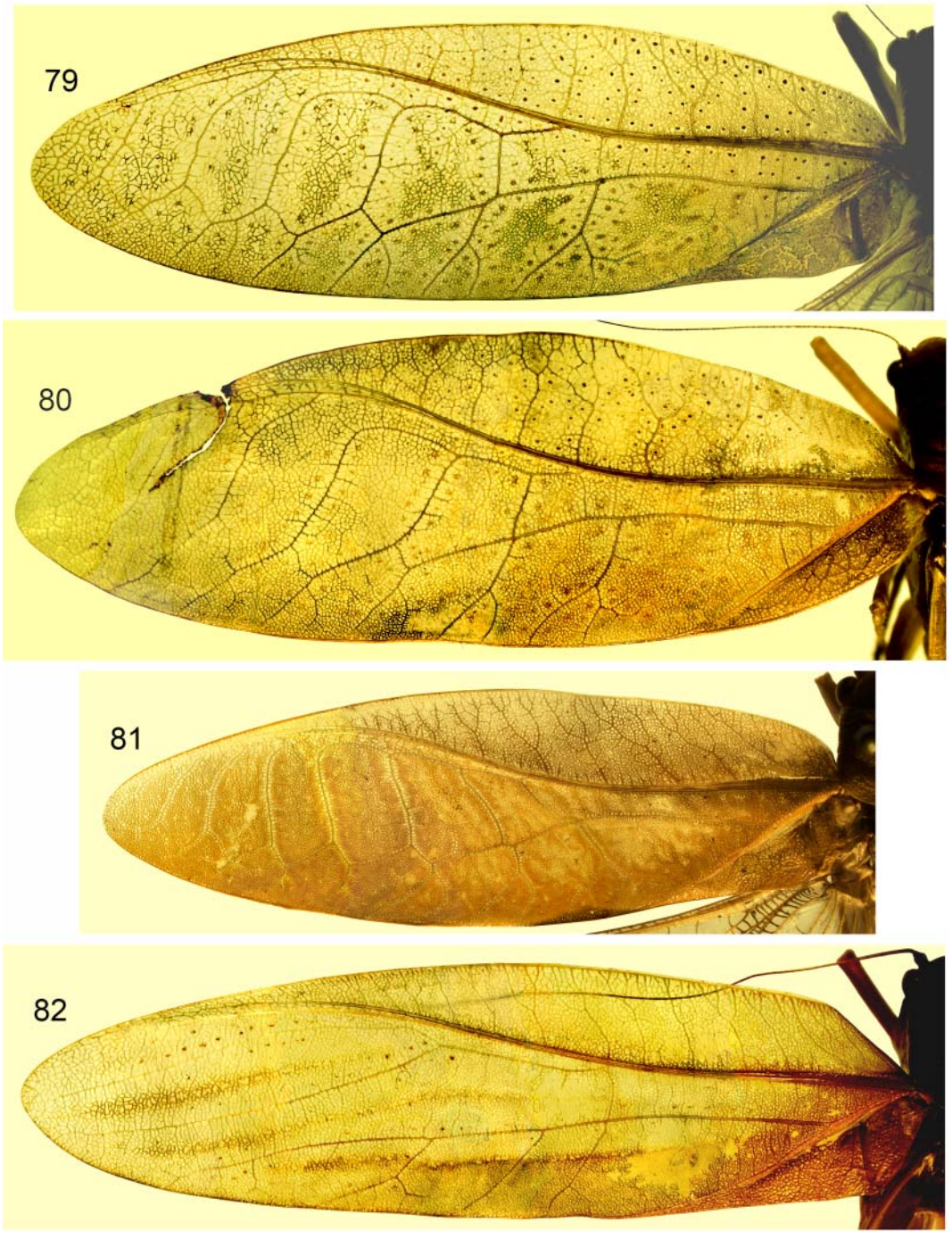
*Length* in mm. Body: male 19–21, female 22–27; body with wings: male 44–48, female 50–56; pronotum: male 4.6–4.9, female 5.1–5.3; tegmina: male 36–39, female 41–45; hind femora: male 18–20, female 21–20; ovipositor 4.6–5.6.

COMPARISON. The new species differs from *I.* (*A.*) *brasiliensis* in a somewhat narrower head rostrum (in *I. brasiliensis*, the distance between the antennal cavities is 1.2–1.3 times as great as the scape width), higher and shorter pronotal lateral lobes having oblique ventral edges (*vs* these edges are more or less rounded), a wider area between the anal tegminal edge and MA, more numerous tegminal RA branches and narrower areas between them (compare Figs 8 and 10). From *I.* (*A.*) *walkeri*, the new species is distinguished by a less strongly curved anterior branch of tegminal RS, a less transverse middle part of this branch, shorter areas between tegminal R and M (before the base of RS) as well as between the tegminal anal edge and MA (see Figs 8 and 11), different (in length) lateral and medial denticles at the male cercal apex (*vs* these denticles are almost equal in length), and possibly a somewhat narrower rostrum (judging by the photo of the




**Figs 75–78.** *Ischyra* (*Anapolisia*), male left tegmen: 75 — *I.* (*A.*) *fracta* **sp.n.** (holotype); 76 — *I.* (*A.*) *semifracta* **sp.n.**; 77 — *I.* (*A.*) *simplicissima* **sp.n.** (holotype); 78 — *I.* (*A.*) *simillima* **sp.n.** (holotype).
**Рис. 75–78.** *Ischyra* (*Anapolisia*), левое надкрылье самца: 75 — *I.* (*A.*) *fracta* **sp.n.** (голотип); 76 — *I.* (*A.*) *semifracta* **sp.n.**; 77 — *I.* (*A.*) *simplicissima* **sp.n.** (голотип); 78 — *I.* (*A.*) *simillima* **sp.n.** (голотип).

head dorsum of *I. walkeri*; Cadena-Castañeda, 2015); from *I.* (*A.*) *gurupi*, by a clearly narrower tegminal area between MA and the proximal part of RS (see Figs 8 and 13); from *I.* (*A.*) *irregulare*, by the two posterior branches of tegminal RA not partly fused with each others and by a wider intermedian area as well as a more widely rounded apical part (see Figs 8 and 14); from *I.* (*A.*?) *magna*, by less distal position of RS in the tegmina and more numerous branches of tegminal RA (*vs* only one preapical branch of tegminal RA is distinct; see Figs 8 and 12).



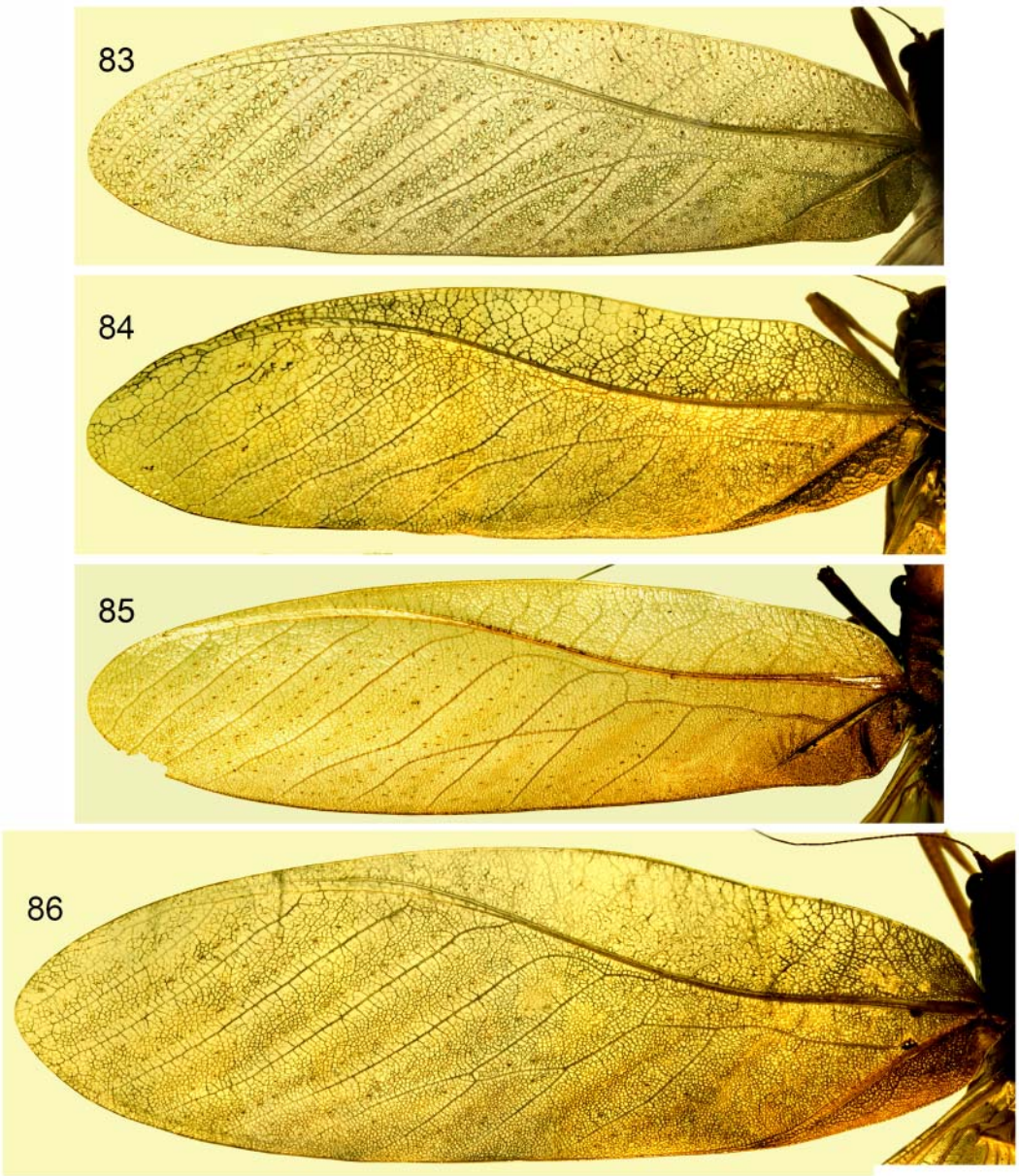

**Figs 79–82.** *Ischyra*, left tegmen: 79, 80 — *I.* (*Anapolisia*) *placulata* **sp.n.**, male holotype (79) and female (80); 81 — *I.* (*Ultraischyra*) *daedala* **sp.n.**, male holotype; 82 — *I.* (*Hualipenna*) *clara* **sp.n.** (male holotype).
**Рис. 79–82.** *Ischyra*, левое надкрылье: 79, 80 — *I.* (*Anapolisia*) *placulata* **sp.n.**, голотип-самец (79) и самка (80); 81 — *I.* (*Ultraischyra*) *daedala* **sp.n.**, голотип-самец; 82 — *I.* (*Hualipenna*) *clara* **sp.n.** (голотип-самец).

*Ishyra* (*Acrephyllum*) *minutissima* Gorochov, **sp.n.**
Figs 49, 50, 71, 72, 92, 93, 166, 167, 199, 200.

ETYMOLOGY. The name of this species is the Latin word "minutissima" (smallest) due to its very small body.

MATERIAL. *Holotype* male, **Peru**: Loreto Department, Pacaya Samiria National Park, ~10 km from Bretaña Vill., cordon PVC 1 on bank of Rio Pacaya (tributary flowing into "Canal de Puinahua" of Ucayali River), 05º14′39.83′′ S, 74º23′206′′ W, low lying primary forest, at light, 10–14.I.2019, A. Gorochov, V. Izerskyy (ZIN). *Paratypes*: 10 males, 1 female, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). Coloration and structure of body very similar to *I.* (*A.*) *peruensis* **sp.n.**, but: body distinctly smaller (see measurements below); dorsum of head, pronotal disc and dorsal field of left tegmen from yellowish to intensively yellow; mandibles with brown darkenings; tegmina without darkened dots or spots; venation of tegmina distinguished from that of holotype of this species by somewhat wider RS-MA area in place of RS bifurcation (Fig. 71); tegminal stridulatory apparatus as in Figs 72, 92, 93 (left stridulatory vein with slightly arcuate row from 45–50 ventral teeth consisting of 7–8 small light teeth in medial part, 33–34 larger and darker teeth in middle part and few small and very small light



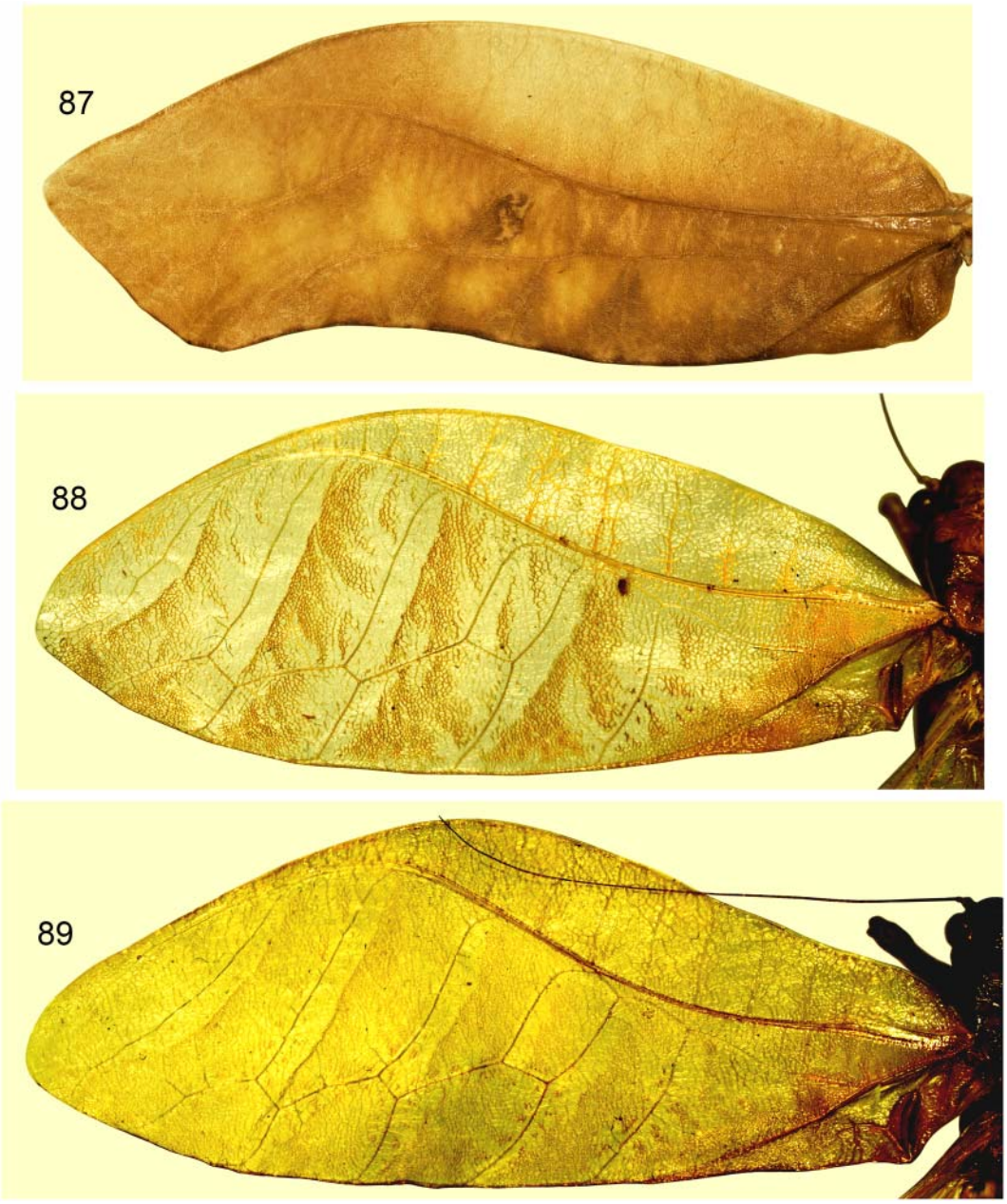

**Figs 83–86.** *Ischyra* (*Caauara*), left tegmen: 83 — *I.* (*C.*) *obliqua* **sp.n.**, male holotype; 84 — *I.* (*C.*) *reticulata* **sp.n.**, female; 85, 86 — *I.* (*C.*) *implaculata* **sp.n.**, male (85) and female (86).
**Рис. 83–86.** *Ischyra* (*Caauara*), левое надкрылье: 83 — *I.* (*C.*) *obliqua* **sp.n.**, голотип-самец; 84 — *I.* (*C.*) *reticulata* **sp.n.**, самка; 85, 86 — *I.* (*C.*) *implaculata* **sp.n.**, самец (85) и самка (86).

teeth in oblique lateral part); cercus with barely thinner and insignificantly less curved distal part, and with traces of soft apical lobule looking as shallow convexity visible between apical denticles (Figs 166, 167); genital plate with slightly less deep posteromedian notch (Fig. 166).

*Variations*. Dorsal tegminal fields sometimes with almost light brown stripe along each lateral edge; one of RA branches sometimes lost; area between RS branches varied from slightly wider to somewhat narrower than in holotype; one of these branches sometimes partly reduced or lost; number of stridulatory teeth in left tegmen insignificantly varied; posteromedian notch of genital plate varied from rounded to almost transversely rectangular.

*Female*. General appearance as in male, but: body slightly larger; coloration of epicranium, pronotum and tegmina more uniform (greenish but with yellowish to rose tinges on some parts); tegminal venation and structure of abdominal apex almost identical to those of female of *I.* (*A.*) *peruensis* **sp.n.** (Figs 199, 200).

*Length* in mm. Body: male 15–19, female 25; body with wings: male 37–40, female 48; pronotum: male 4–4.4, female 4.7; tegmina: male 30–32, female 37; hind femora: male 15–16.5, female 18.5; ovipositor 5.3.

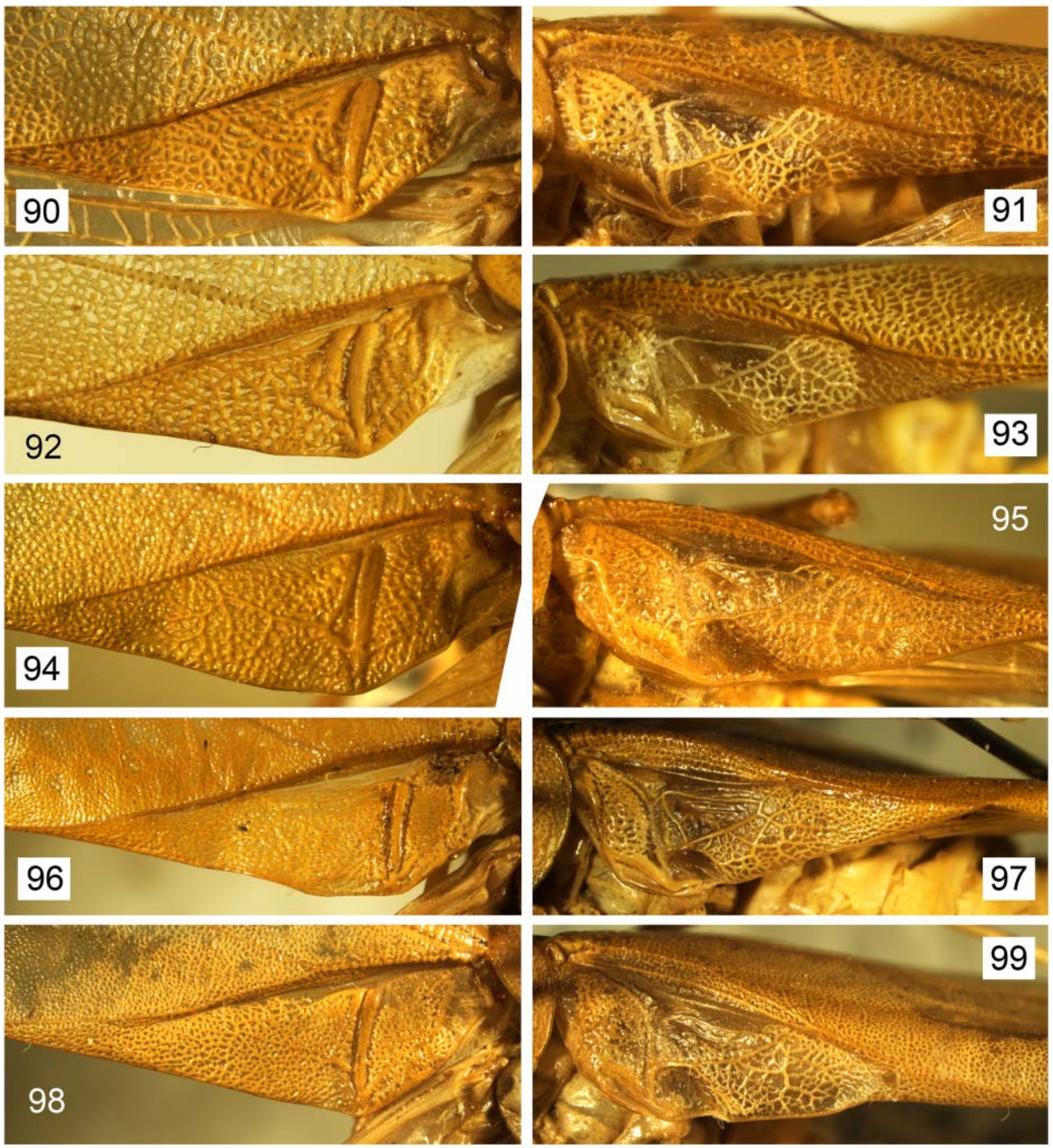



**Figs 87–89.** *Tuaia* and *Tropicophyllum*, male left tegmen: 87 — *Tu*. (*Tuaia*) *pilosa* **sp.n.** (holotype); 88 — *Tr*. (*Tropicophyllum*) *zonatum clausum*; 89 — *Tr*. (*Tr*.) *z. zonatum*.
**Рис. 87–89.** *Tuaia* и *Tropicophyllum*, левое надкрылье самца: 87 — *Tu*. (*Tuaia*) *pilosa* **sp.n.** (голотип); 88 — *Tr*. (*Tropicophyllum*) *zonatum clausum*; 89 — *Tr*. (*Tr*.) *z. zonatum*.

COMPARISON. The new species differs from *I.* (*A.*) *peruensis* **sp.n.** in smaller body size, the absence of darkened spots or dots on the tegmina, and less numerous large ventral teeth on the left stridulatory vein. From all other species of this subgenus, the new species is distinguished by the same characters as *I.* (*A.*) *peruensis* **sp.n.**

*Ischyra* (*Acrephyllum*) *guyanensis* Gorochov, **sp.n.**
Figs 9, 37–39, 73, 74, 94, 95, 168–170.

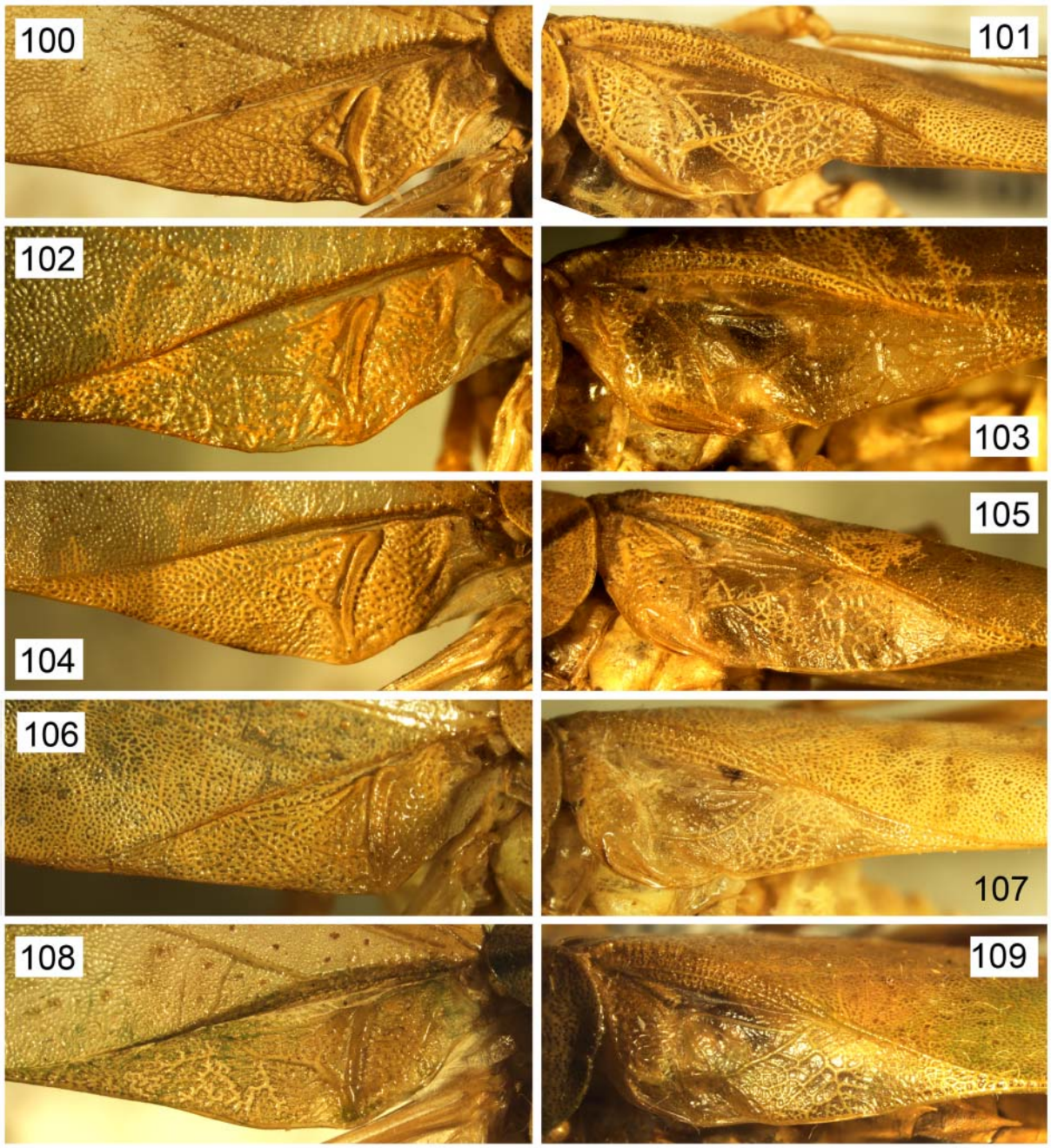
ETYMOLOGY. This species is named after the region (French Guiana = Guyane française) where it was collected.




**Figs 90–99.** *Ischyra*, male stridulatory apparatus: 90, 91 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (holotype); 92, 93 — *I.* (*A.*) *minutissima* **sp.n.** (holotype); 94, 95 — *I.* (*A.*) *guyanensis* **sp.n.**; 96, 97 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (holotype); 98, 99 — *I.* (*Hualipenna*) *clara* **sp.n.** (holotype). Left tegmen (90, 92, 94, 96, 98); right tegmen (91, 93, 95, 97, 99).
**Рис. 90–99.** *Ischyra*, стридуляционный аппарат самца: 90, 91 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (голотип); 92, 93 — *I.* (*A.*) *minutissima* **sp.n.** (голотип); 94, 95 — *I.* (*A.*) *guyanensis* **sp.n.**; 96, 97 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (голотип); 98, 99 — *I.* (*Hualipenna*) *clara* **sp.n.** (голотип). Левое надкрылье (90, 92, 94, 96, 98); правое надкрылье (91, 93, 95, 97, 99).

MATERIAL. *Holotype* male, **French Guiana**, "Mt de Kaw", 2 km SE of Caimans Camp (4º34′ N, 52º12′ W), 300 m, 10.VII.1995, V. Gusarov (ZIN).

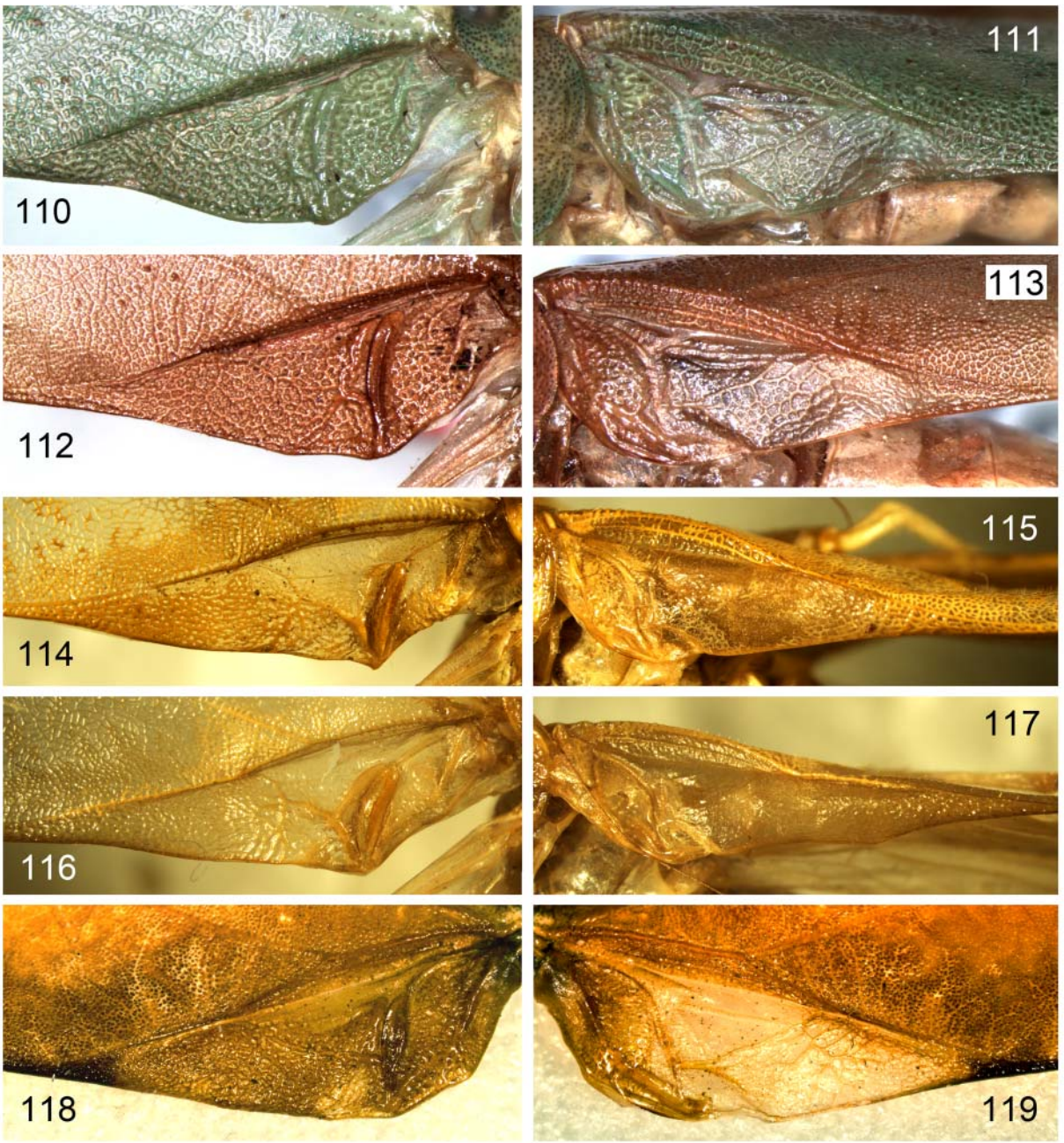
DESCRIPTION. *Male* (holotype). General appearance very similar to that of *I.* (*A.*) *peruensis* **sp.n.** but with following differences: darkened marks on tegmina absent; all tarsi with three proximal segments almost greyish brown (Fig. 39); head rostrum insignificantly wider (distance between antennal cavities approximately 1.3 times as great as width of scape), and upper rostral tubercle with dorsomedian concavity shallower than in *I.* (*A.*) *peruensis* sp.n. (Figs 37, 38); pronotum with posteromedian notch of disc significantly shallower and rounded (Fig. 38), and with lateral lobes having rounded ventral edges (Fig. 39); tegmina barely wider than those of *I.* (*A.*) *peruensis* **sp.n.**, with smaller and more numerous cells between branches of RA and RS, proximal part of anterior branch of RS more strongly curved,




**Figs 100–109.** *Ischyra* (*Anapolisia*), male stridulatory apparatus: 100, 101 — *I.* (*A.*) *fracta* **sp.n.** (holotype); 102, 103 — *I.* (*A.*) *semifracta* **sp.n.**; 104, 105 — *I.* (*A.*) *simplicissima* **sp.n.** (holotype); 106, 107 — *I.* (*A.*) *simillima* **sp.n.** (holotype); 108, 109 — *I.* (*A.*) *placulata* **sp.n.** (holotype). Left tegmen (100, 102, 104, 106, 108); right tegmen (101, 103, 105, 107, 109).

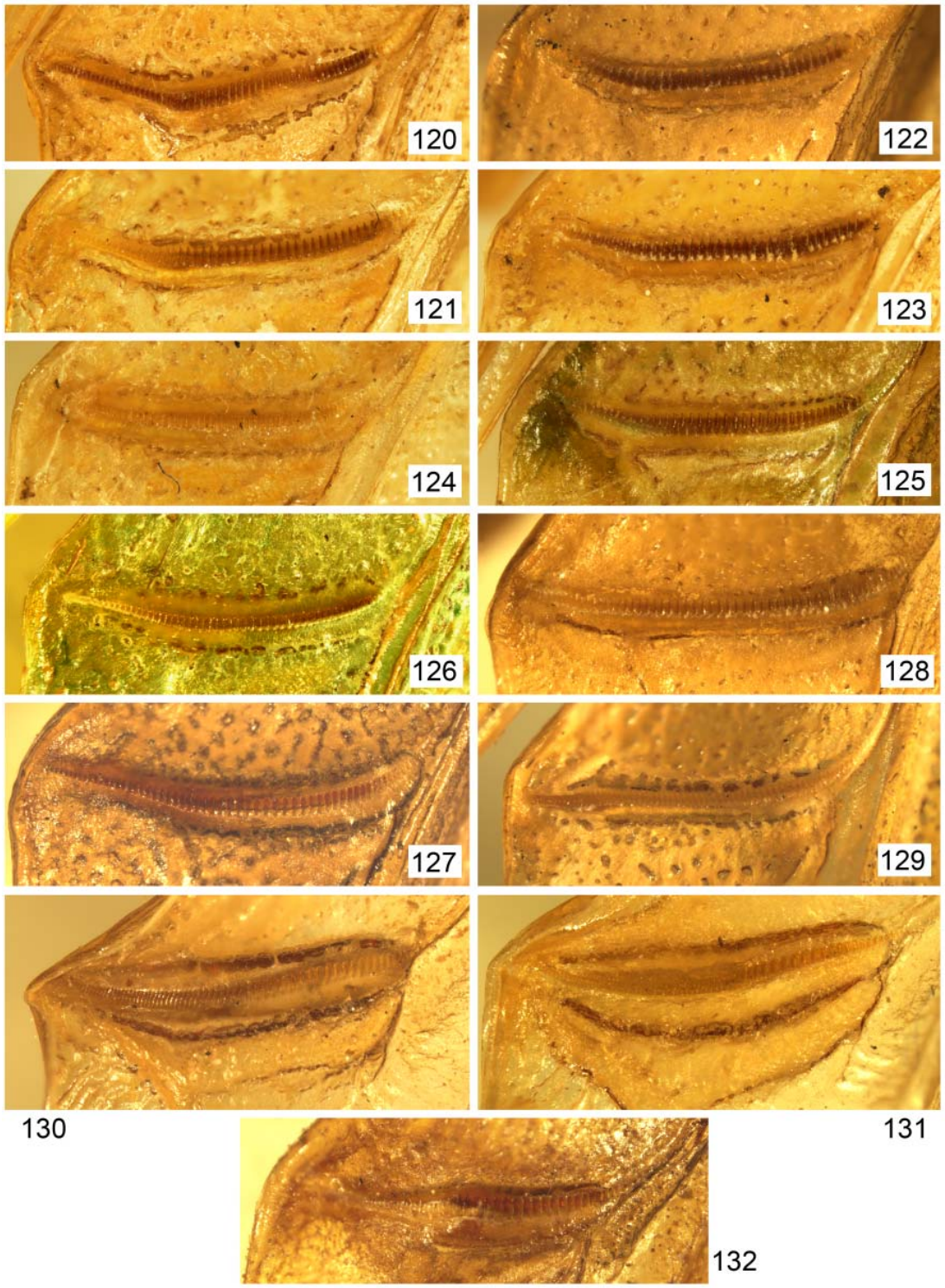
**Рис. 100–109.** *Ischyra* (*Anapolisia*), стридуляционный аппарат самца: 100, 101 — *I.* (*A.*) *fracta* **sp.n.** (голотип); 102, 103 — *I.* (*A.*) *semifracta* **sp.n.**; 104, 105 — *I.* (*A.*) *simplicissima* **sp.n.** (голотип); 106, 107 — *I.* (*A.*) *simillima* **sp.n.** (голотип); 108, 109 — *I.* (*A.*) *placulata* **sp.n.** (голотип). Левое надкрылье (100, 102, 104, 106, 108); правое надкрылье (101, 103, 105, 107, 109).

middle part of this branch (after above-mentioned curvature) more transverse, RA branches somewhat longer, area between R and M (before base of RS) slightly longer, area between anal edge and MA distinctly wider (Figs 9, 73), and stridulatory apparatus having about 58 ventral teeth on stridulatory vein of left tegmen (49 of them larger and possibly participating in stridulation) and one thickened transverse crossvein very near this vein not interrupted (Figs 74, 94, 95); abdomen with second–third tergites having almost spine-like (but rather short) posteromedian projection, and with forth–sixth tergites having very small and roundly angular projection; cercus with only one small dark apical denticle (but this denticle with two almost angular apices; Figs 168, 170); genital plate with apical part rather wide (approximately as in *I. peruensis* sp.n. with widest this part) but having insignificantly shorter styles and very small posteromedian projection between them (Fig. 169).



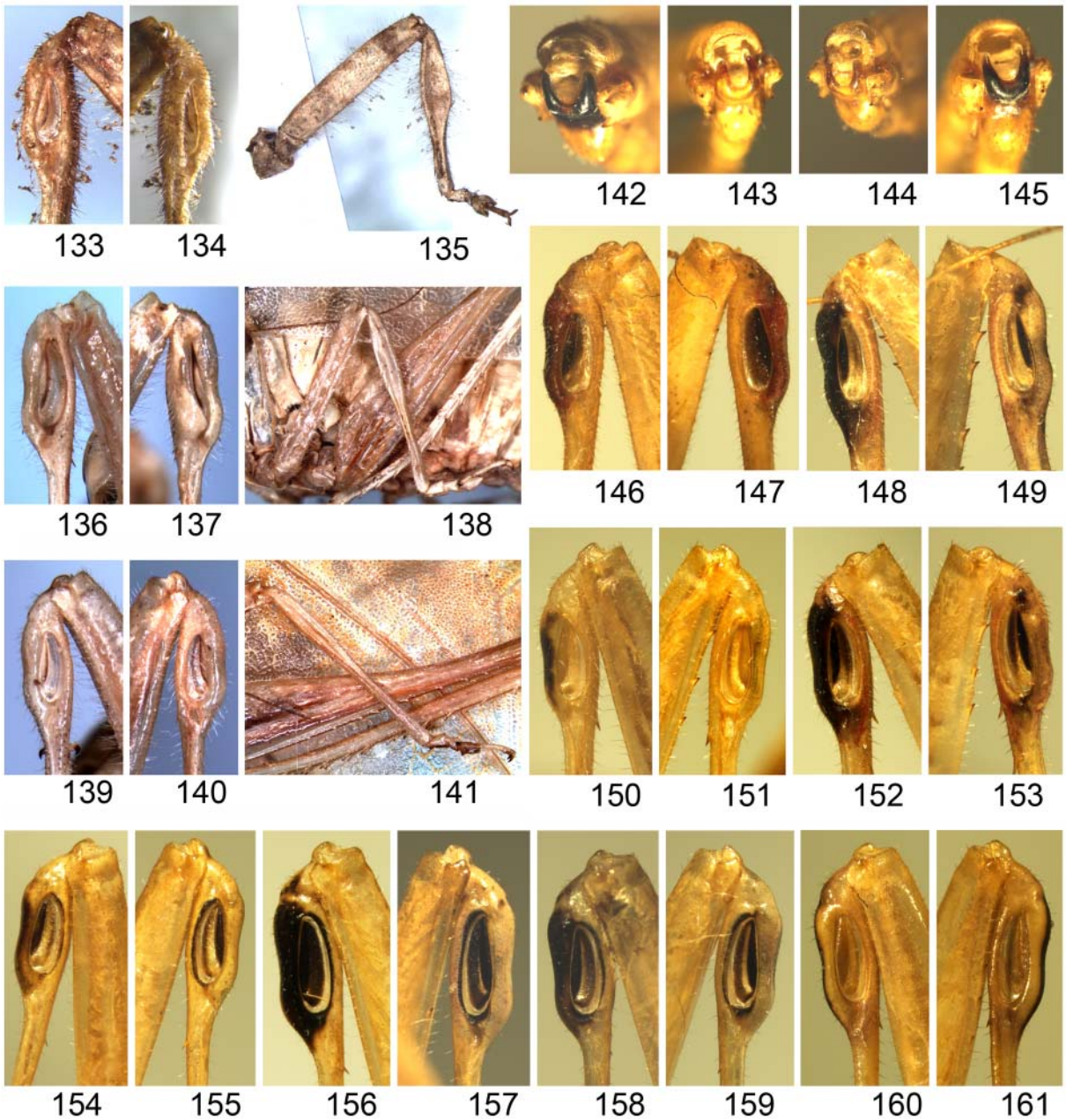

**Figs 110–119.** *Ischyra*, *Tropicophyllum* and *Tuaia*, male stridulatory apparatus: 110, 111 — *I.* (*Caauara*) *obliqua* **sp.n.** (holotype); 112, 113 — *I.* (*C.*) *implaculata* **sp.n.**; 114, 115 — *Tr.* (*Tropicophyllum*) *zonatum clausum*; 116, 117 — *Tr.* (*Tr.*) *z. zonatum*; 118, 119 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (holotype). Left tegmen (110, 112, 114, 116, 118); right tegmen (111, 113, 115, 117, 119).

**Рис. 110–119.** *Ischyra*, *Tropicophyllum* и *Tuaia*, стридуляционный аппарат самца: 110, 111 — *I.* (*Caauara*) *obliqua* **sp.n.** (голотип); 112, 113 — *I.* (*C.*) *implaculata* **sp.n.**; 114, 115 — *Tr.* (*Tropicophyllum*) *zonatum clausum*; 116, 117 — *Tr.* (*Tr.*) *z. zonatum*; 118, 119 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (голотип). Левое надкрылье (110, 112, 114, 116, 118); правое навдкрылье (111, 113, 115, 117, 119).




**Figs 120–132.** *Ischyra*, *Tropicophyllum* and *Tuaia*, stridulatory vein of male left tegmen from below: 120 — *I.* (*Anapolisia*) *fracta* **sp.n.** (holotype); 121 — *I.* (*A.*) *semifracta* **sp.n.**; 122, 123 — *I.* (*A.*) *simplicissima* **sp.n.** (122, holotype); 124 — *I.* (*A.*) *simillima* **sp.n.** (holotype); 125 — *I.* (*A.*) *placulata* **sp.n.** (holotype); 126 — *I.* (*Caauara*) *obliqua* **sp.n.** (holotype); 127 — *I.* (*C.*) *implaculata* **sp.n.**; 128 — *I.* (*Hualipenna*) *clara* **sp.n.** (holotype); 129 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (holotype); 130 — *Tr.* (*Tropicophyllum*) *zonatum clausum*; 131 — *Tr.* (*Tr.*) *z. zonatum*; 132 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (holotype).

**Рис. 120–132.** *Ischyra*, *Tropicophyllum* и *Tuaia*, стридуляционная жилка левого надкрылья самца снизу: 120 — *I.* (*Anapolisia*) *fracta* **sp.n.** (голотип); 121 — *I.* (*A.*) *semifracta* **sp.n.**; 122, 123 — *I.* (*A.*) *simplicissima* **sp.n.** (122, голотип); 124 — *I.* (*A.*) *simillima* **sp.n.** (голотип); 125 — *I.* (*A.*) *placulata* **sp.n.** (голотип); 126 — *I.* (*Caauara*) *obliqua* **sp.n.** (голотип); 127 — *I.* (*C.*) *implaculata* **sp.n.**; 128 — *I.* (*Hualipenna*) *clara* **sp.n.** (голотип); 129 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (голотип); 130 — *Tr.* (*Tropicophyllum*) *zonatum clausum*; 131 — *Tr.* (*Tr.*) *z. zonatum*; 132 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (голотип).




**Figs 133–161.** *Tuaia*, *Tropicophyllum*, *Ischyra* and *Microcentrum*, male: 133–135 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (holotype); 136–138 — *Tr.* (*Tropicophyllum*) *zonatum clausum*; 139–141 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (holotype); 142 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.** (holotype); 143 — *M.* (*C.*) *grandiplacula* **sp.n.** (holotype); 144 — *M.* (*C.*) *morona* **sp.n.**; 145 — *M.* (*C.*) *miniplacula* **sp.n.** (holotype); 146, 147 — *M.* (*Microcentrum*) *stridulomaculosum*; 148, 149 — *M.* (*M.*) *jalisco* **sp.n.** (holotype); 150, 151 — *M.* (*M.*) *simplex*; 152, 153 — *M.* (*M.*) *sympatricum* **sp.n.**; 154, 155 — *M.* (*M.*) *xerophilum* **sp.n.** (holotype); 156, 157 — *M.* (*M.*) *selva* **sp.n.** (holotype); 158, 159 — *M.* (*M.*) *lacandonense* **sp.n.**; 160, 161 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** Outer (133, 136, 139, 146, 148, 150, 152, 154, 156, 158, 160) and inner (134, 137, 140, 147, 149, 151, 153, 155, 157, 159, 161) tympana of fore tibia; middle leg (135, 138) and its tibia (141), lateral view; base of hind tibia, dorsoproximal view (142–145).

**Рис. 133–161.** *Tuaia*, *Tropicophyllum*, *Ischyra* и *Microcentrum*, самец: 133–135 — *Tu.* (*Tuaia*) *pilosa* **sp.n.** (голотип); 136–138 — *Tr.* (*Tropicophyllum*) *zonatum clausum*; 139–141 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (голотип); 142 — M. (*Carnavalia*) *philammon tuxtlas* **subsp.n.** (голотип); 143 — *M.* (*C.*) *grandiplacula* **sp.n.** (голотип); 144 — *M.* (*C.*) *morona* **sp.n.**; 145 — *M.* (*C.*) *miniplacula* **sp.n.** (голотип); 146, 147 — *M.* (*Microcentrum*) *stridulomaculosum*; 148, 149 — *M.* (*M.*) *jalisco* **sp.n.** (голотип); 150, 151 — *M.* (*M.*) *simplex*; 152, 153 — *M.* (*M.*) *sympatricum* **sp.n.**; 154, 155 — *M.* (*M.*) *xerophilum* **sp.n.** (голотип); 156, 157 — *M.* (*M.*) *selva* **sp.n.** (голотип); 158, 159 — *M.* (*M.*) *lacandonense* **sp.n.**; 160, 161 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** Наружный (133, 136, 139, 146, 148, 150, 152, 154, 156, 158, 160) и внутренний (134, 137, 140, 147, 149, 151, 153, 155, 157, 159, 161) тимпанумы передней голени; средняя нога (135, 138) и ее голень (141), латеральный вид; основание задней голени, дорсопроксимальный вид (142–145).

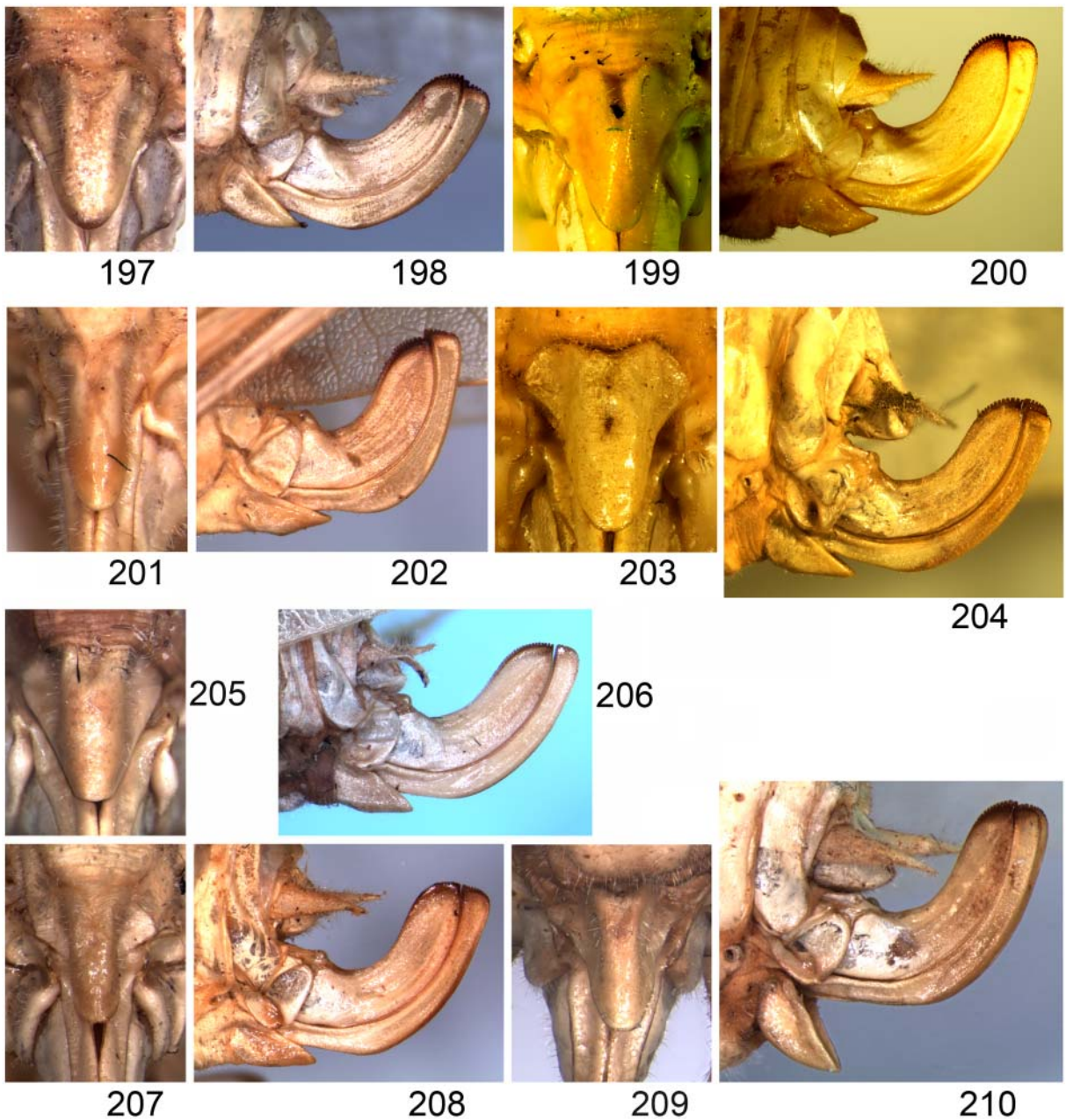

**Figs 162–196.** *Ischyra*, *Tuaia* and *Tropicophyllum*, male abdomen: 162–165 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (162, 163, 165, holotype); 166, 167 — *I.* (*Ac.*) *minutissima* **sp.n.** (holotype); 168–170 — *I.* (*Ac.*) *guyanensis* **sp.n.**; 171–173 — *I.* (*Anapolisia*) *fracta* **sp.n.** (173, holotype); 174–176 — *I.* (*An.*) *simplicissima* **sp.n.** (holotype); 177, 178 — *I.* (*An.*) *placulata* **subsp.n.** (holotype); 179–181 — *I.* (*Caauara*) *obliqua* **sp.n.** (holotype); 182, 183 — *I.* (*C.*) *implaculata* **sp.n.**; 184–186 — *I.* (*Hyalipenna*) *clara* **sp.n.** (holotype); 187–190 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (187–189, holotype); 191–193 — *Tuaia pilosa* **sp.n.** (holotype); 194–196 — *Tropicophyllum zonatum clausum*. Abdomen (172) and its apex (162, 168, 174, 179, 184, 187, 191, 195) from above; abdominal apex from below (163, 164, 166, 169, 171, 175, 177, 180, 182, 185, 188, 192, 196); distal part of right cercus, posteroventral view (165, 167, 170, 173, 176, 178, 181, 183, 186, 189, 190, 193, 194).

**Рис. 162–196.** *Ischyra*, *Tuaia* и *Tropicophyllum*, брюшко самца: 162–165 — *I.* (*Acrephyllum*) *peruensis* **sp.n.** (162, 163, 165, голотип); 166, 167 — *I.* (*Ac.*) *minutissima* **sp.n.** (голотип); 168–170 — *I.* (*Ac.*) *guyanensis* **sp.n.**; 171–173 — *I.* (*Anapolisia*) *fracta* **sp.n.** (173, голотип); 174–176 — *I.* (*An.*) *simplicissima* **sp.n.** (голотип); 177, 178 — *I.* (*An.*) *placulata* **subsp.n.** (голотип); 179–181 — *I.* (*Caauara*) *obliqua* **sp.n.** (голотип); 182, 183 — *I.* (*C.*) *implaculata* **sp.n.**; 184–186 — *I.* (*Hyalipenna*) *clara* **sp.n.** (голотип); 187–190 — *I.* (*Ultraischyra*) *daedala* **sp.n.** (187–189, голотип); 191–193 — *Tuaia pilosa* **sp.n.** (голотип); 194–196 — *Tropicophyllum zonatum clausum*. Брюшко (172) и его вершина (162, 168, 174, 179, 184, 187, 191, 195) сверху; вершина брюшка снизу (163, 164, 166, 169, 171, 175, 177, 180, 182, 185, 188, 192, 196); дистальная часть правого церка, постеровентральный вид (165, 167, 170, 173, 176, 178, 181, 183, 186, 189, 190, 193, 194).

*Female* unknown.

Length in mm. Body 22, body with wings 50; pronotum 5.6; tegmina 39; hind femora 19.

COMPARISON. The new species differs from *I.* (*A.*) *peruensis* **sp.n.** in the aforementioned characters (see *I. guyanensis* **sp.n.** description above). From *I.* (*A.*) *brasiliensis*, the new species is distinguished by wider tegmina as well as area between the tegminal anal edge and MA, a more transverse middle part of the anterior branch of RS, more numerous RA branches, and narrower areas between them as well as between these branches and RS (compare Figs 9 and 10); from *I.* (*A.*) *walkeri*, by shorter areas between tegminal R and M before the base of RS as well as between the tegminal anal edge and MA, the presence of one apical denticle on the male




**Figs 197–210.** *Ischyra*, female abdomen: 197, 198 — *I.* (*Acrephyllum*) *peruensis* **sp.n.**; 199, 200 — *I.* (*Ac.*) *minutissima* **sp.n.**; 201, 202 — *I.* (*Anapolisia*) *simillima* **sp.n.**; 203, 204 — *I.* (*An.*) *placulata* **sp.n.**; 205, 206 — *I.* (*Hualipenna*) *clara* **sp.n.**; 207, 208 — *I.* (*Caauara*) *reticulata* **sp.n.**; 209, 210 — *I.* (*C.*) *implaculata* **sp.n.** Genital plate from below (197, 199, 201, 203, 205, 207, 209); ovipositor with genital plate from side (198, 200, 202, 204, 206, 208, 210).

**Рис. 197–210.** *Ischyra*, брюшко самки: 197, 198 — *I.* (*Acrephyllum*) *peruensis* **sp.n.**; 199, 200 — *I.* (*Ac.*) *minutissima* **sp.n.**; 201, 202 — *I.* (*Anapolisia*) *simillima* **sp.n.**; 203, 204 — *I.* (*An.*) *placulata* **sp.n.**; 205, 206 — *I.* (*Hualipenna*) *clara* **sp.n.**; 207, 208 — *I.* (*Caauara*) *reticulata* **sp.n.**; 209, 210 — *I.* (*C.*) *implaculata* **sp.n.** Генитальная пластинка снизу (197, 199, 201, 203, 205, 207, 209); яйцеклад с генитальной пластинкой сбоку (198, 200, 202, 204, 206, 208, 210).

cercus (*vs* male cercal apex of *I. walkeri* has two dark denticles clearly separated from each other and almost equal in length), and possibly longer branches of tegminal RA (see Figs 9 and 11); from *I.* (*A.*) *gurupi*, by less obliquely longitudinal (more obliquely transverse) branches of RA and RS, and somewhat wider intermedial tegminal area (see Figs 9 and 13); from *I.* (*A.*) *irregulare*, by the same characters as well as by more regular RA branches (see Figs 9 and 14); and from *I.* (*A.*?) *magna*, the new species is distinguished by the same characters as *I.* (*A.*) *peruensis* **sp.n.** (see Figs 9 and 12).

### *Ischyra* (*Anapolisia*) *fracta* Gorochov, **sp.n.**
Figs 19, 40–42, 75, 100, 101, 120, 171–173.

ETYMOLOGY. This species name is the Latin word "fracta" (broken) due to the shape of the ventral part of the male left tegmen stridulatory vein.

TYPE MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., ~40 km NE of Satipo Town, environs of Calabaza Vill., ~2000 m, primary forest, at light, 16–17.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 1 male, same province, ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 2 males, same data, but 1000–1200 m, 5–9.XII.2017, A. Gorochov, G. Irisov (ZIN); 1 male, same country, Ucayali Department, Oxapampa Prov., "11 km on 230º from Puerto Bermudes, 10º29.9′ S, 75º03.1′ W", 713 m, 10–12.III.2011, V. Sinyaev, A. Poleschuk (ZIN).

DESCRIPTION. *Male* (holotype). Body rather large for this genus. Coloration and structure of body somewhat similar to those of *I.* (*Acrephyllum*) *peruensis* **sp.n.** and *I.* (*Acrephyllum*) *guyanensis* **sp.n.** but with characteristic features. Coloration uniformly light yellowish green with a pair of black short vertical lines on lateral lobes of pronotum not far from its anterior edge, with brown to light brown numerous dots on pronotal disc and fore legs as well as very small tegminal spots almost as in *I.* (*A.*) *peruensis* **sp.n.**, and with more or less transparent majority of cell membranes in wings (Figs 41, 42, 75). Head with rostral tubercles much wider (distance between antennal cavities almost twice as great as width of scape) and strongly pressed to each other; upper rostral tubercle with only slight and thin longitudinal median groove dorsally (Figs 40, 41). Pronotum rather short, with very distinct but short and angular anteromedian projection, with small and narrow but rather deep posteromedian notch, with disc having more developed relief and numerous very small punctures, and with lateral lobes longer in upper parts and clearly shorter in lower parts as well as having roundly oblique ventral edges (Figs 41, 42). Tegmina very long and somewhat widened (almost longitudinally oval but with narrowly rounded apices), with following venation: cells along branches of RA and RS distinctly larger than cells between these branches; costal area with rather numerous and very small round thickenings (placulae) on some cell membranes; RS branches more strongly S-shaped (but clearly oblique in most transverse parts); RA with 3 preapical branches (longest of them also distinctly S-shaped); other venation (except for stridulatory apparatus) as in Figs 19, 75; tegminal stridulatory apparatus with characteristically broken stridulatory vein of left tegmen (this vein ventrally having narrow medial part with 26 small teeth, wider middle part with 34 large teeth as well as narrow lateral part with about 7 very small and light teeth, but latter teeth possibly not participating in stridulation; Fig. 120), and with thickened crossvein near this vein forming longer (less transverse than in *I. peruensis* **sp.n.** and *I. guyanensis* **sp.n.**) triangle (Figs 100, 101). Abdomen as in Figs 171, 172: second and third tergites with spine-like posteromedian projection (somewhat longer than in *I. guyanensis* **sp.n.**); forth and fifth tergites with similar but somewhat shorter projection; sixth and seventh tergites with very short (almost indistinct) projection; cercus rather thin in subapical part, having very short but somewhat ridge-like dark denticle at apex and very small dark spinule near it (Fig. 173); genital plate as in Fig. 171.

*Variations*. Head dorsum often also with numerous light brown dots; pronotal disc and fore legs sometimes with more distinct dots; tegmina often with several additional very small placulae in proximal part of interradial area and sometimes with one of RA branches poorly developed; number of teeth in stridulatory vein of left tegmen and width of posteromedian notch in genital plate insignificantly varied.

*Female* unknown.

*Length* (mm). Body 21–24; body with wings 58–61; pronotum 6.2–6.5; tegmina 47–50; hind femora 19–19.5.

COMPARISON. The new species differs from other congeners of the same subgenus in the following tegminal characters (compare Figs 17, 18, 21 and 22 with 19): from *I.* (*Anapolisia*) *planiceps*, in distinctly narrower tegmina with a clearly narrower intermedial area; from possible *I.* (*A.*) *micromargaritifera*, in a longer narrowed part of the area between RA and RS, more numerous RA branches and a narrower area between MA and the anal edge (this edge in the new species is also less convex); from *I.* (*A.*) *navigator*, in a less strongly curved proximal part of the anterior RS branch, a narrower (shorter) area between MA and the proximal part of RS, and a less convex middle part of the anal tegminal edge; and from all others, in the row of the ventral teeth on the male left stridulatory vein characteristically broken (Fig. 120), but *I.* (*A.*) *bare* (Mendes et Rafael, 2025), having this row more or less similar, is additionally distinguished from *I.* (*A.*) *fracta* **sp.n.** by more S-shaped RS branches and a significantly wider (longer) area between MA and the proximal part of the posterior RS branch.

### *Ischyra* (*Anapolisia*) *semifracta* Gorochov, **sp.n.**
Figs 51, 76, 102, 103, 121.

ETYMOLOGY. This species name consists of the Latin prefix "semi-" (half) and species name *I.* (*A.*) *fracta* **sp.n.** due to a less broken ventral row from stridulatory teeth in the male left tegmen.

TYPE MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN).

DESCRIPTION. *Male* (holotype). General appearance very similar to that of *I.* (*A.*) *fracta* **sp.n.** but with following characteristic features: coloration light greenish with greyish to greyish brown middle part of antennal flagellum (its distal part missing), with very small light brownish dots on pronotal disc and on femur and tibia of fore leg (dots on pronotum distinct and numerous but on fore leg less numerous and less distinct), and with transparent wing membranes and darkened cercal apical denticles as in this species; pronotal disc with distinct angular anteromedian projection but almost without posteromedian notch (Fig. 51); tegmina with venation almost as in *I.* (*A.*) *fracta* **sp.n.**, with moderately numerous small placulae in different parts of costal area and in some other parts of lateral field (Fig. 76), and with stridulatory apparatus as in Figs 102, 103 (stridulatory vein of left tegmen less strongly curved than in *I. fracta* **sp.n.**, and with 48–50 ven-

tral teeth which forming oblique and barely curved row from 25–26 large dark teeth, almost straight and transverse medial row from 17–18 smaller and lighter teeth, and arcuate lateral row from few small and very small light teeth; Fig. 121); abdomen distinguished from that of this species by only slightly less distinct posteromedian spinules on 4–6th abdominal tergites, and genital plate with shallow but almost transversely rectangular posteromedian notch (width of latter notch about twice as great as its depth, and styles moderately thin and barely longer than width of this notch).

*Female* unknown.

*Length* in mm. Body 23; body with wings 60; pronotum 6.4; tegmina 49; hind femora 19.5.

COMPARISON. Differences from *I.* (*A.*) *fracta* **sp.n.** are listed above, in the description (among these differences, the most important one is a less clearly broken ventral row of teeth on the left male stridulatory vein; compare Figs 120 and 121). Some other congeners, *I.* (*A.*) *caete* (Mendes et Rafael, 2025) and *I.* (*A.*) *bare*, are also similar to the new species in the shape of this row from stridulatory teeth, but they are distinguished from the latter by the more distal position of RS branches in the male tegmina (*I. caete*) or by the more transversely located both the middle part of RS anterior branch and the proximal part of RS posterior branch (*I. bare*).

## *Ischyra* (*Anapolisia*) *simplicissima* Gorochov, **sp.n.**
Figs 43–45, 77, 104, 105, 122, 123, 174–176.

ETYMOLOGY. This species name is the Latin word "simplicissima" (simplest) due to the simple shape of the male left tegmen stridulatory vein.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town, environs of Sapani Vill., ~300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 10 males, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance similar to that of *I.* (*A.*) *fracta* **sp.n.** but with following differences: head with insignificantly wider rostrum (distance between antennal cavities almost 2.5 times as great as scape width; Fig. 43); head dorsum and pronotal disc approximately as in holotype of *I. semifracta* **sp.n.** in coloration (Fig. 44); pronotum (compared to *I. fracta* **sp.n.**) with slightly shorter anteromedian projection and clearly smaller posteromedian notch, and with shorter dark brown lines on lateral lobes not far from anterior pronotal edge (Figs 44, 45); tegmina more uniform in coloration (with only very small reddish dots instead small darkish spots) and shorter, with all cells of lateral field very small and almost equal in size, with space behind RS also shorter (but with 3 preapical branches of RA), and with only a few very small placulae in basal part of lateral field (Fig. 77); tegminal stridulatory apparatus (Figs 104, 105) with stridulatory vein in left tegmen simple in shape (slightly arcuate and having about 51 teeth, but almost 36 of them larger and gradually narrowing to medial and lateral ends; Fig. 122), and with nearest thickened vein forming short (transverse) and somewhat irregular triangle (Fig. 104); cercus barely less curved, with distal half approximately as in *I.* (*A.*) *fracta* **sp.n.** but having two dark denticles less different in size and more or less ridge-like (Figs 174, 176); genital plate (Fig. 175) with posteromedian notch almost as in *I.* (*Acrephyllum*) *guyanensis* **sp.n.** but with styles slightly longer (approximately as in *I. fracta* **sp.n.**).

*Variations*. Tegmina sometimes with 2 preapical RA branches as well as with sparse and very small placulae located also along Sc stock and proximal half of R stock; number of teeth on left stridulatory vein insignificantly varied (see Figs 122 and 123); cercus often with one of apical denticles thinner (spinule-like, almost as in *I. fracta* **sp.n.**); genital plate sometimes with posteromedian notch slightly narrower, completely rounded or almost rectangular.

*Female* unknown.

*Length* in mm. Body 22–27; body with wings 49–54; pronotum 5.8–6.3; tegmina 39–44; hind femora 17.5–20.

COMPARISON. The new species is distinguished from other congeners of the same subgenus by an almost arcuate (not broken) row of the ventral teeth on the left stridulatory vein (Figs 122, 123) and/or by the following combination of tegminal features: by the area between the proximal parts of RS or by the area between MA and the proximal part of the posterior branch of RS (or by both of these areas) larger (longer or wider) or smaller (shorter or narrower); by RS branches with less transverse or less longitudinal middle parts; by the posterior branch of RA more S-shaped. From *I.* (*Anapolisia*) *tucurasu* (Mendes et Rafael, 2025) and *I.* (*A.*) *picta* (Mendes et Rafael, 2025), having these differences (from the new species) less distinct, *I.* (*A.*) *simplicissima* **sp.n.** additionally differs in a somewhat wider intermedial (between MA and MP) area and in a more strongly arcuate medial half of the teeth row on the male left stridulatory vein, respectively.

## *Ischyra* (*Anapolisia*) *simillima* Gorochov, **sp.n.**
Figs 52, 78, 106, 107, 124, 201, 202.

ETYMOLOGY. The new species is named by the Latin word "simillima" (most similar) due to its big similarity to *I.* (*A.*) *simplicissima* **sp.n.**

MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., Rio Tampo Distr., ~6 km N of Pichiguia Vill., "Reserva Comunal Ashaninka", 11.35824º S, 74.03205º W, ~500 m, primary forest, at light, 14–23.XI.2017, A. Gorochov, G. Irisov (ZIN). *Paratypes*: 1 male, same data as for holotype (ZIN); 1 female, same country, Cusco Department (NW), environs of Miaria Vill. on Urubamba River, 11.33502º S, 72.99284º W, primary forest, at light, 8–11.X.2021, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance very similar to that of *I.* (*A.*) *simplicissima* **sp.n.** but with following differences: body slightly smaller (see measurements below); brownish dots on legs indistinct; upper rostral tubercle without traces of median groove or concavity on dorsal surface; pronotum with more acute angular anteromedian projection of disc (Fig. 52); tegmina with numerous small placulae in different parts of costal area and in some other parts of lateral field (Fig. 78); tegminal stridulatory apparatus with less distinct vein located very near stridulatory vein in left tegmen, with shorter and wider mirror in right tegmen (Figs 106, 107), and with left stridulatory vein having more straight row of ventral teeth in medial half of this vein (this row consisting of 52–54 light brown teeth which forming rather long but almost transverse row from 45–46 larger teeth and shorter but oblique lateral row from 7–8 small teeth; Fig. 124); abdomen distinguished from that of this species by cerci with very small apical denticle more separated from ridge-like apical denticle (almost as in Fig. 178), and by genital plate having more rounded apical notch as well as smaller styles (these styles slightly thinner than in *I. simplicissima* **sp.n.** and insignificantly shorter than depth of aforementioned apical notch).

*Variation*. Second male with upper rostral tubercle of head having very small and barely distinct concavity on dorsum, and with more distinct vein located very near stridulatory vein

of left tegmen (but this non-stridulatory vein not pressed to stridulatory one; in *I. simplicissima* **sp.n.**, these veins almost completely pressed to each other).

*Female*. Coloration and structure of body (including presence of numerous small placulae in tegmina) as in male paratype; however, dorsal tegminal fields and abdominal apex very similar to those of female in *I.* (*Acrephyllum*) *peruensis* **sp.n.** and in *I.* (*A.*) *minutissima* **sp.n.**, but genital plate with slightly narrower distal third of ventromedian keel (Figs 201, 202).

*Length* in mm. Body: male 23–28, female 24; body with wings: male 46–48, female 53; pronotum: male 5.2–5.4, female 6.1; tegmina: male 36–37.5, female 42; hind femora: male 15.5–17, female 18; ovipositor 4.9.

COMPARISON. The new species differs from most similar *I.* (*A.*) *simplicissima* **sp.n.** in the presence of numerous small placulae in the tegminal lateral fields and a more straight medial half of the left stridulatory vein (in *I. simplicissima* **sp.n.**, this half is insignificantly but distinctly curved; compare Figs 122, 123 and 124). From some other more or less similar species (*I. fracta* **sp.n.** and *I. semifracta* **sp.n.**), the new species is distinguished by the same character of the left stridulatory vein and shorter wings; and from all other congeners of this subgenus, as *I.* (*A.*) *simplicissima* **sp.n.**

### *Ischyra* (*Anapolisia*) *placulata* Gorochov, **sp.n.**
Figs 20, 46–48, 79, 80, 108, 109, 125, 177, 178, 203, 204.

ETYMOLOGY. The new species is named after the Latin word "placula" (placula, small plate or round thickening) due to the presence of numerous small placulae (round thickenings) on the tegminal membranes.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, Oxapampa Prov., "11 km on 230º from Puerto Bermudes, 10º29.9′ S, 75º03.1′ W", 713 m, 10–12.III.2011, V. Sinyaev, A. Poleschuk (ZIN). *Paratypes*: 1 male, same data as for holotype (ZIN); 1 female, same country, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, 1000–1200 m, primary forest, at light, 5–9.XII.2017, A. Gorochov, G. Irisov (ZIN).

DESCRIPTION. *Male* (holotype). Size, coloration and structure of body very similar to those of *I.* (*A.*) *simplicissima* **sp.n.** but with some differences: rostrum of head somewhat narrower (distance between antennal cavities approximately 2.2 times as great as scape width; Fig. 46); a pair of dark vertical lines on pronotal lateral lobes (located not far from their anterior edges) slightly longer and darker (almost black; Figs 47, 48); tegmina insignificantly longer, with rather numerous very small rose placulae in majority of lateral field areas, and with branches of RA and RS more strongly S-shaped (middle parts of RS branches and of longest RA branch more transverse; Figs 20, 79), but tegminal stridulatory apparatus practically indistinguishable from that of this species (stridulatory vein with almost 41 teeth, but about 37 of them larger and possibly active; Figs 108, 109, 125); abdomen distinguished from that of this species by only cercal apex having spinule-like denticle located not very near slightly larger ridge-like denticle (Fig. 178); genital plate with posteromedian notch similar to that of holotype of this species but having anterior edge almost transversely straight (Fig. 177).

*Variation*. Paratype with tegminal branches of RA and RS more or less intermediate between those of aforementioned holotype and *I.* (*A.*) *simplicissima* **sp.n.**, and with genital plate having slightly rounded and insignificantly narrower posteromedian notch.

*Female*. General appearance as in males, but tegmina barely wider, tegminal area between base of posterior RS branch and MA slightly narrower (shorter) than tegminal area between proximal parts of RS branches, dorsal tegminal fields as in other females of this subgenus (Fig. 80), genital plate most similar to that of *I.* (*A.*) *simillima* **sp.n.** but somewhat wider (less laterally compressed; Fig. 203), and ovipositor as in Fig. 204.

*Length* in mm. Body: male 24–26, female 28; body with wings: male 55–57, female 63; pronotum: male 6.1–6.4, female 6.7; tegmina: male 44–46, female 50; hind femora: male 19.7–20.5, female 20; ovipositor 5.8.

COMPARISON. The new subspecies is distinguished from *I.* (*A.*) *simplicissima* **sp.n.** by the features listed above (in the description of *I. placulata* **sp.n.**). From *I.* (*A.*) *simillima* **sp.n.**, the new species differs in the same characters (except for the tegminal placulae which are well developed in both species). And from all other congeners of this subgenus, it differs in the following combination of tegminal characters: its area between proximal parts of RS branches or its area between MA and proximal part of the posterior RS branch (or both of these areas) are larger (longer or wider) or smaller (shorter or narrower); its RS branches have more transverse middle parts; its posterior RA branch is more S-shaped; the row of its male left stridulatory teeth is less arcuated, more arcuated or not broken.

### *Ischyra* (*Anapolisia*) *micromargaritifera* Piza, 1980

NOTE. There is a problem with this species. The photographs of the two type specimens of this species in OSF clearly show that they belong to different species: the male with the wider and intact tegmina is considered the holotype from "Paraiba" (its tegmina also have arcuate anal edges and venation as in Fig. 17); but the male with the narrower and somewhat damaged tegmina (a small fragment of the costal edge is missing) is considered the paratype from "Cabeceiras" (its tegmina have partly straight anal edges and somewhat different venation). Recently, Mendes and Rafael [2025: fig. 94, A–K] published photographs of a male, very similar to the latter male from "Cabeceiras", as photographs of the holotype from "Paraiba". Moreover, this male is probaly the same one indicated as the paratype in OSF, because it has identically damaged but spread (possibly by Mendes and Rafael) wings. Thus, it is unclear which of these males is the true holotype, and which of these species is the true *I.* (*A.*) *micromargaritifera*?

### *Ischyra* (*Caauara*) *obliqua* Gorochov, **sp.n.**
Figs 23, 54–56, 83, 110, 111, 126, 179–181.

ETYMOLOGY. The species name is the Latin word "obliqua" (oblique) due to the shape of some veins in the tegmina.

MATERIAL. *Holotype* male. **Peru**: Ucayali Department, Oxapampa Prov., "11 km on 230º from Puerto Bermudes", 10º29.9′ S, 75º03.1′ W, 713 m, 10–12.III.2011, V. Sinyaev, A. Poleschuk (ZIN). *Paratypes*: 1 male, same data as for holotype (ZIN); 1 female, same department, Atalaya Prov., ~ 35 km NWW of Atalaya Town, environs of Sapani Vill., ~ 300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN).

DESCRIPTION. *Male* (holotype). Body rather large for this genus. Coloration uniformly light greenish with light brown eyes and numerous very small dots on some other parts of body (on dorsum of head, on pronotal disc, on fore femur, on fore and middle tibiae), four rather short black lines on pronotum (Figs 54–56), transparent membranes in many cells of wings (including those in stridulatory apparatus of right tegmen), brown to light brown rather numerous very small

spots between tegminal M and R as well as between all their branches (Figs 83, 110, 111). Head with wide rostrum (distance between antennal cavities almost twice as great as scape width), but upper rostral tubercle with barely distinct narrow longitudinal grooves on dorsum (Figs 54, 55); pronotum and legs very similar to those of *I.* (*I.*) *simplicissima* **sp.n.** (Figs 55, 56). Tegmina long and narrow, rounded at apex, approximately trice as long as distance from tegminal base to RS base, with branches of Sc and RA as well as posterior RS branch and most part of anterior RS branch almost regularly oblique and more or less parallel, with 4 preapical RA branches, with cells between RS and MP as well as between their branches distinctly different in size, with rather numerous very small placulae in costal area and between R and MA as well as between RS branches (Figs 23, 83), and with stridulatory apparatus as in Figs 110, 111 (stridulatory vein of left tegmen with about 53 teeth, but 43 of them larger; Fig. 126); parts of hind wings, exposed behind tegminal apices in rest position, approximately 5 mm in length. Abdomen with almost spine-like but moderately short posteromedian projection on second and third tergites, with distinctly shorter ones on forth, fifth and sixth tergites, and with last tergite and epiproct as in all previous species described here (Fig. 179); cercus distinguished from that of these species by only apical part having two apical denticles of somewhat different size and located almost at same base (Fig. 181); genital plate as in Fig. 180.

*Variation*. Male paratype without one black (posterior) line on pronotum, with almost indistinct darkened dots on legs, and with missing base of subposterior RA branch in one of tegmina.

*Female* unknown.

*Length* in mm. Body 23–25; body with wings 54–56; pronotum 5.7–5.9; tegmina 44–45; hind femora 19.5–20.5.

COMPARISON. From all known species of *Caauara*, the new species differs in more proximal position of RS base in the tegmen as well as a smaller (shorter) area between tegminal MP and the posterior branch of MA, and/or in much less numerous ventral teeth on the stridulatory vein of the male left tegmen.

## *Ischyra* (*Caauara*) *reticulata* Gorochov, **sp.n.**
Figs 53, 84, 207, 208.

ETYMOLOGY. This species name is the Latin word "reticulata" (reticulated, netty) due to a distinctly reticulated structure of the dorsal tegminal field venation.

MATERIAL. *Holotype* female, PERU: Ucayali Department, Atalaya Prov., ~ 35 km NWW of Atalaya Town, environs of Sapani Vill., ~ 300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN).

DESCRIPTION. *Female* (holotype). General appearance similar to that of *I.* (*C.*) *obliqua* **sp.n.** but with following characteristic features: pronotal disc as well as fore femur and fore tibia with numerous and small browhich grey dots, but dorsum of head without any darkened marks, and pronotal disc with only a pair of short transverse dark brown lines on places of transitions from disc to lateral lobes; middle leg with only a few poorly distincty darkish dots on tibia; tegmina with much less distinct (sparser and smaller) placulae on costal area, without more or less darkened marks and oblique stripes (bands) on rest of lateral field, with 3 branches of RS and 3 subapical branches of RA in left tegmen (aberration; Fig. 84), with 2 and 4 these branches (respectively) in right tegmen, with posterior RS branch of both tegmina somewhat more curved (than in *I. obliqua* **sp.n.**) and having short middle part located more or less near MA (Fig. 84), and with cellular venation of left and partly right dorsal fields having strongly convex relief (some veins and crossveins distinctly higher than in females of all other studied species of this genus, forming characteristic net from keel-like venation; Fig. 53); abdomen with posteromedian projection on fourth abdominal tergite almost as long and spine-like as on second and third abdominal tergites; last tergite with almost straight posterior edge; epiproct rather small, triangularly rounded, with groove-like median longitudinal concavity on proximal half of dorsal (posterior) surface; genital plate also triangular but laterally compressed, with somewhat concave dorsolateral edges and narrowly and roundly truncated apex (Figs 207, 208); ovipositor as in Fig. 208.

*Male* unknown.

*Length* in mm. Body 23; body with wings 57; pronotum 5.9; tegmina 44; hind femora 22; ovipositor 6.

COMPARISON. The new species is distinguished from *I.* (*C.*) *obliqua* **sp.n.** by less numerous and smaller placulae in the costal tegminal area, the absence of posterior darkened lines on the pronotal disc as well as of darkened marks on the lateral tegminal fields, and possibly a more convex reticular venational relief of the dorsal tegminal fields. From *I.* (*C.*) *aspera* (Mendes, Chamorro-Rengifo et Rafael, 2020), the new species differs in more numerous branches of tegminal RS and RA together (6 instead 5), a more narrowly rounded tegminal apex and a greater difference between the minimal width of R-MA area and the maximal width of the intermedial area; and from all other congeners of this subgenus, in unspotted tegmina, in a more oblique thickened tegminal crossvein between MA and the base of RS or in less arcuate distal branches of tegminal RA.

## *Ischyra* (*Caauara*) *implaculata* Gorochov, **sp.n.**
Figs 24, 57–59, 85, 86, 112, 113, 127, 182, 183, 209, 210.

ETYMOLOGY. This species name originates from another species name (*placulata*) but with the Latin prefix "im-" (not) due to the almost complete absence of any placulae in the tegmina.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, Atalaya Prov., environs of Pitza Vill., 10º54.780′ S, 73º51.054′ W, II.2021, possibly V. Izerskyy (ZIN). *Paratype* female, same country, Cusco Department, La Convencion Prov. or Calca Prov., 50–55 km N of Quillabamba Town, environs of Huillcapampa Station of SERNANP, 12.34083º S, 72.65147º W, 600–800 m, 16–22.X.2021, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance similar to that of *I.* (*C.*) *obliqua* **sp.n.** but with following differences: body coloration yellowish with brownish tinge, smaller darkened spots (almost dots) in tegminal lateral fields and other marks as in this species (Figs 85, 112, 113); tegmina (Figs 24, 85) with Sc branches somewhat less regular, with posterior RA branch and most part of anterior RS branch barely sinuate, with posterior RS branch shortly fused with MA before their distal parts, almost without placulae in lateral field (only a few extremely small placulae developed near tegminal base), and with stridulatory apparatus as in Figs 112, 113 (stridulatory vein with 59 teeth, and 48 of them larger; Fig. 127); cercal apex also with two denticles, but ridge-like (larger) denticle distinctly wider than in this species (Fig. 183); genital plate as in Fig. 182.

*Female*. Coloration and structure of body very similar to those of male, but body somewhat larger, general coloration yellowish with greyish tinge, dorsal tegminal fields distinguished from those of female of *I.* (*C.*) *reticulata* **sp.n.** by only

less convex relief of venation (this relief almost as in all other previously considered congeners), MA and posterior branch of RS in tegmina not fused with each other but located very near each other before their distal parts (Fig. 86), and abdominal apex almost same as in *I.* (*C.*) *reticulata* **sp.n.** (Figs 209, 210).

*Length* in mm. Body: male 31, female 34; body with wings: male 57, female 66; pronotum: male 6.5, female 7; tegmina: male 47, female 52; hind femora: male 22, female 28; ovipositor 6.5.

COMPARISON. The new species differs from *I.* (C.) *obliqua* **sp.n.** in the characters listed above, and from *I.* (*C.*) *reticulata* **sp.n.**, in a significantly less convex venation in the dorsal tegminal fields and a narrower minimal width of tegminal RS-MA area. The new species is also similar to *I.* (*C.*) *tinga* (Mendes, Chamorro-Rengifo et Rafael, 2020) and *I.* (*C.*) *tukupi* (Mendes, Chamorro-Rengifo et Rafael, 2020) in the fusion of the nearest branches of RS and MA in the male tegmina, but it is additionally distinguished from them by less longitudinal distal parts of the branches of tegminal R or by a shorter distance between the bases of MA and of MA posterior branch in relation to the latter branch length, respectively; and from other species of *Caauara*, by the above-mentioned fusion of RS with MA or a similar structure of these veins in composition with less spotted tegmina, less numerous or more numerous tegminal branches of R, a more broken stem of tegminal MA and some other characters.

## *Ischyra* (*Hyalipenna*) *clara* Gorochov, **sp.n.**
Figs 25, 60–62, 82, 98, 99, 128, 184–186, 205, 206.

ETYMOLOGY. This species name is the Latin word "clara" (clear) due to simple and understandable tegminal venation.

MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 1 female, same province, environs of satipo Town, ~800 m, primary forest near waterfall, at light, 4–5.XI.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, same country, Ucayali Department, Atalaya Prov., environs of Pitza Vill., 10º54.780´ S, 73º51.054´ W, II.2021, possibly V. Izerskyy (ZIN).

DESCRIPTION. *Male* (holotype). General appearance more or less similar to that of subgenera *Anapolisia* and *Caauara*. Body rather large, almost uniformly yellowish but with light brown eyes, 2 brown lines on tympanic membrane of inner tympanum, 3 very light brown longitudinal stripes on each tegmen (between RS branches, in radial area as well as between MA and anal tegminal edge), very sparse light brown dots in distal half of tegminal lateral field and transparent wing membranes as in above-mentioned subgenera (Figs 60–62, 82, 98, 99). Head with distance between antennal cavities almost twice as great as scape width (Fig. 60); pronotum practically indistinguishable from that of *Caauara* species (Figs 61, 62); tegmina long and narrow, with RS bifurcation located in more distal part of tegmen than in *I.* (*H.*) *tetralineata* (proximal part of RS before its bifurcation clearly longer than in this species; Figs 25, 82), with area between this bifurcation and MA clearly wider than area between MA and anal tegminal edge near this bifurcation (in *I. tetralineata*, these portions of aforementioned areas of opposite width), and with stridulatory apparatus as in Figs 98, 99 (stridulatory vein of left tegmen with about 66 ventral teeth, and 46–47 of them larger; Fig. 128); abdomen with small angular posteromedian projection on second tergite and on third one, as well as with similar but very small posteromedian projection on forth tergite; abdominal apex typical of this genus (Figs 184, 185), but cercus with only one roundly angular denticle at apex (Fig. 186), and genital plate distinguished from that of *I.* (*C.*) *obliqua* **sp.n.** mainly by more distinct angular posteromedian projection on anterior edge of its apical notch (Fig. 185).

*Variations*. Male paratype with light brown dorsum of pronotum, slightly more distinct brownish longitudinal stripes on lateral tegminal field, barely narrower apical notch of genital plate having almost transversely straight anterior edge of this notch, and insignificantly shorter styles of this plate.

*Female*. General appearance as in male holotype, but dorsal tegminal field and abdominal apex typical of female in this genus (Figs 205, 206).

*Length* in mm. Body: male 21–23, female 25; body with wings: male 53–55, female 58; pronotum: male 6–6.2, female 6.6; tegmina: male 44–45, female 49; hind femora: male 21.5, female 22.5; ovipositor 6.

COMPARISON. Differences of the new species from *I.* (*H.*) *tetralineata* are listed above.

## *Ischyra* (*Ultraischyra*) *daedala* Gorochov, **sp.n.**
Figs 15, 63–65, 81, 96, 97, 129, 139–141, 187–190.

ETYMOLOGY. This species name is the Latinized Greek word "daedala" (daedalous, complex) due to complicated tegminal venation.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, Atalaya Prov., ~ 35 km NWW of Atalaya Town, environs of Sapani Vill., ~ 300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 2 males, same data as for holotype (ZIN); 3 males, same country, Junin Department, Satipo Prov., Rio Tampo Distr., ~6 km N of Pichiguia Vill., "Reserva Comunal Ashaninka", 11.35824º S, 74.03205º W, ~500 m, primary forest, at light, 14–23.XI.2017, A. Gorochov, G. Irisov (ZIN); 1 male, same country, Cusco Department, La Convencion Prov. or Calca Prov., 50–55 km N of Quillabamba Town, environs of Huillcapampa Station of SERNANP, 12.34083º S, 72.65147º W, 600–800 m, primary forest, at light, 16–22.X.2021, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance more or less typical of this genus. Body moderately small and yellowish but with brownish tinge as well as with following marks: eyes and a pair of transverse (partly vertical) short lines in anterolateral parts of pronotal dorsum light brown; lines on inner tympanic membrane and transparent membranes of wings as in *I.* (*H.*) *clara* **sp.n.** Head with barely distinct and very thin transverse groove between rostral tubercles; distance between antennal cavities approximately 2.5 times as great as width of scape (Fig. 63); pronotum similar to that of other congeners considered here, but its disc with slightly more distinct relief and almost without posteromedian notch (Figs 64, 65); fore tibia with outer tympanum open but barely immersed, and with inner tympanum also open but somewhat more immersed (Figs 139, 140); tegmina with sparse and very small placulae on lateral field, with venation of this field as in Figs 15 and 81, and with stridulatory apparatus as in Figs 96, 97 (stridulatory vein of left tegmen with 63 teeth, and 51 of them larger; Fig. 129); abdomen with very small roundly angular posteromedian projection on second–fifth tergites; abdominal apex almost as in *I.* (*H.*) *clara* **sp.n.**, but each cercus with ridge-like apical denticle having additional smaller denticle on base of previous denticle (Figs 187, 189), and genital plate approximately as in holotype of this species (Fig. 188).

*Variations*. One male distinguished from holotype by only one ridge-like but more or less angular denticle at cercal apex (Fig. 190), and another male with such denticle barely bilobed at apex.

*Female* unknown.

*Length* in mm. Body 19–22; body with wings 44–46; pronotum 5.5–5.8; tegmina 36–38; hind femora 15–16.

COMPARISON. The new species is distinguished from all congeners of this subgenus by the tegmina with the long parts of both RS branches directed proximedially (obliquely from more distolateral position to more proximedial position; Fig. 15); but in all the other representatives of *Ultraischyra* **subgen.n.** (see the subgeneric key above), these parts of RS branches are directed distomedially (obliquely from the more proxilateral position to the more distomedial position) or approximately transversely (medially).

## Genus *Tropicophyllum* Koçak et Kemal, 2008

= *Rossophyllum* Grant, 1958, homonym (see OSF).

Type species of both (in original binomen): *Rossophyllum clausum* Grant, 1958, by original designation.

NOTE. This genus is probably closely related to the genus *Ischyra* and especially to *Capanema* which is here considered as a subgenus of *Tropicophyllum* s.l. The structure of its head, pronotum and abdomen is characteristic of *Ischyra* s.l., but the fore tibia has a partly slit-like inner tympanum, and its middle and hind tibiae are slightly more widened in their basal portions (compare Figs 136–138 and 139–141). The space between the antennal cavities is as wide as in some representatives of *Ischyra* s.l. (approximately 3 times as wide as the scape). And the wing structure is also of the same type (with a very narrow proximal part of the interradial area in the tegmina and larger transparent cell membranes along some main veins of the tegminal lateral field), but the tegmina are more or less widened and with more diverse structure of RS and MA (sometimes some parts of these veins are even difficult for homologization; for example, the venation of the type species of *Tropicophyllum* may be interpreted at least by 3 methods; see Figs 29–31). In relation to these veins structure, this genus is divided into 3 subgenera which include 18 species listed in the subgeneric key below (in this key, the interpretation of the tegminal venation for the type species of this genus and for its nearest relatives is given as in Fig. 31):

1. Tegminal MA shortly fused with subproximal part of RS stock (Figs 31, 32); ovipositor without denticles (Fig. 5) or unknown .....2
– Tegminal MA not fused with RS and not contacting with it (Figs 26–28); ovipositor with denticles or unknown..... .....subgenus ***Prorossophyllum*** **Gorochov, subgen.n.** [Included species (in original binomen): *Microcentrum colosseum* Brunner-Wattenwyl, 1878 (Colombia); *Rossophyllum sentum* Grant, 1958 (Brazil); *R. maculosum* Bowen-Jones, 2000 (Costa Rica) — type species of *Prorossophyllum*; *Tropicophyllum oscari*, *T. tucurauna*, *T. ubatuba*, possibly *T. mirim* and *T. mirirana* as well as *T. tucuramiri* described by Mendes and Rafael [2025] from Brazil.]
2. Tegminal area between R (including RS) and M (including MA) consisting of 4 subareas (large parts of this area outlined by longitudinal veins and thickened crossveins), with second (from tegminal base) subarea smallest (Fig. 31); ovipositor without denticles (Fig. 5) or unknown ..... .....subgenus ***Tropicophyllum*** **s.str.** [Included species (in original binomen): *Rossophyllum zonatum* Giglio-Tos, 1898 (Ecuador and Peru) — type species of *Rossophyllum* and *Tropicophyllum*; *Tropicophyllum bururama*, *T. caquetaense*, *T. curupira*, *T. gurupi*, *T. mapinguari* and *T. uirapuru* described by Mendes and Rafael [2025] from Brazil.]
– Tegminal area between R and M consisting of 3 subareas only, with second subarea not smaller than third one (Fig. 32); ovipositor unknown ..... ... subgenus ***Capanema*** **Mendes et Rafael, 2021, stat.n.** [Included species (in original binomen): *Capanema pocanga* Mendes et Rafael, 2021 (Brazil) — type species of *Capanema*; *C. capara* Mendes et Rafael, 2021 (Brazil).]

REMARKS. The tegminal evolution of this genus might be as follows: the first way is the origin of *Tropicophyllum* s. str. and *Capanema* as a single branch (its synapomorhy may be a partial fusion of RS with MA) from the more primitive subgenus *Prorossophyllum* **subgen.n.** (in this variant, the primitive dense net of small cells, almost completely occupying the tegminal lateral fields, is preserved in some species of *Prorossophyllum* **subgen.n.** and in *Capanema*; but wide bands of large and transparent cells are independently developed in other representatives of *Prorossophyllum* **subgen.n.** and in *Tropicophyllum* s.str.); the second way is the origin of *Capanema* directly from primitive representatives of *Prorossophyllum* **subgen.n.** lacking wide transparent bands on the tegmina, and the independent origin of *Tropicophyllum* s.str. from more modified representatives of *Prorossophyllum* **subgen.n.** having wide transparent bands on the tegmina (in this variant, the partial fusion of RS and MA is a convergence). Moreover, we can see some other tegminal convergences in all groups of this genus: a tendence to contact and fusion of the subproximal part of the anterior branch of RS with RA stock (Figs 26, 28, 31, 32); a tendence to reduction and loss of the most proximal part in this branch (Figs 31, 32) and in RS stock (Fig. 31); a tendence to partial or complete fusion of RS stock (before RS bifurcation) with RA (Fig. 31 or some species of *Prorossophyllum* **subgen.n.**, respectively). However, such modifications of nearest veins should be considered as reduction phenomena which may occur very quickly and are usually of little importance in generic and subgeneric taxonomy.

### *Tropicophyllum zonatum* (Giglio Tos, 1898)
### Figs 29–31, 88, 89, 114–117, 130, 131, 136–138, 194–196.

MATERIAL. **Ecuador**: 1 male, ~75 km SEE of Quito City, environs of El Chaco Vill. on Rio Quijos, ~1500 m, secondary forest, on leaf of tree at night, 18–22.XI.2005, A. Gorochov, A. Ovtshinnikov (ZIN). **Peru**: 1 male, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, 1000–1200 m, primary forest, at light, 5–9.XII.2017, A. Gorochov, G. Irisov (ZIN); 1 male, same locality but 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, Ucayali Department, Atalaya Prov., environs of Pitza Vill., 10º54.780′ S, 73º51.054′ W, II.2021, possibly V. Izerskyy (ZIN); 7 males, same department and province, ~35 km NWW of Atalaya Town, environs of Sapani Vill., ~300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, "Uchiza San Martin", 8º26.6′ S, 76º26.6′ W, 542 m, 18–19.II.2011, V. Sinyaev, A. Poleschuk (ZIN).

REMARKS. This species was described from Ecuador [Giglio-Tos, 1898] and originally included in the genus *Ischyra*. Later Grant [1958] described *Rossophyllum clausum*

from Peru which was synonymized with the previous species by Cadena-Castañeda [2014]. However, my material from these countries conditionally allows this synonymy only for species level, because these taxa belong to two different subspecies as minimum: my male from Ecuador differs from all Peruvian males in a slightly narrower proximal third of its tegmen, a slightly more proximal position of the most widened tegminal part, shorter (narrower) large ventral teeth in the lateral portion of the left stridulatory vein (compare Figs 88, 130 and 89, 131), a slightly wider dorsal part of this vein, and the nearest thickened vein located somewhat less closely to this stridulatory vein (see Figs 114, 115 and 116, 117). Thus, this species probably consists of *T. zonatum zonatum* from Ecuador and *T. z. clausum* (Grant, 1958), **stat.n.** from Peru.

## Genus *Tuaia* Mendes, Chamorro-Rengifo et Rafael, 2020

Type species (in original binomen): *Tuaia panacarica* Mendes, Chamorro-Rengifo et Rafael, 2020, by original designation.

NOTE. This genus is also similar and probably closely related to *Ischyra* s.l. and *Tropicophyllum*, but it is distinguished from most members of the first genus by the much wider head rostrum (the distance between the antennal cavities is almost 4 times as great as the scape width; *vs* this ratio is usually 1–2.5), by an almost semicircular transverse section of the dorsal pronotal part (*vs* the pronotum has a more or less flat disc well separated from the lateral lobes by slightly rounded lateral carinae), by somewhat laterally flattened femora of the fore and middle legs as well as laterally flattened and proximally widened tibiae of these legs (Figs 133–135), by open outer tympana and partly slit-like inner ones (Figs 133, 134; *vs* all tympana open), by strongly laterally compressed hind femora and somewhat proximally widened hind tibiae, by the tegmina with very dense crossvenation (lacking slightly or significantly enlargened cells along the main branches of the lateral field; Fig. 87), and by the absence of any posteromedian tubercles on the abdominal tergites. From *Tropicophyllum*, *Tuaia* differs in the same pronotal and tegminal characters as from *Ischyra* s.l.

*Capiguara* Mendes, Chamorro-Rengifo et Rafael, 2020 is evidently a very closely related taxon to *Tuaia*, because they are very similar in all the above-mentioned characters (including the coloration often with numerous small whitish spots, and a characteristically sinuate row of the ventral teeth on the left stridulatory vein; Fig. 132) but insignificantly different in the structure of legs and tegmina: *Tuaia* is without small dorsal spinules on fore and middle tibiae, with somewhat larger widenings on these tibiae and with tegminal RS ending clearly before the tegminal apex (the latter tegminal character is main one for the separation of the nominotypical sugenus of the genus *Steirodon* Serville, 1831 from its most similar subgenus *Peucestes* Stål, 1874 [Gorochov, 2025]). Thus, *Capiguara* is probably a subgenus of *Tuaia* s.l., and this combined genus may include the following taxa: *Tuaia* s.str. with *T. panacarica* Mendes, Chamorro-Rengifo et Rafael, 2020 (type species of *Tuaia*), *T. poranga* Mendes, Chamorro-Rengifo et Rafael, 2020 (both from Brazil) and *T. pilosa* **sp.n.**; the subgenus *Capiguara* **stat.n.** with C. *trimacula* Mendes, Chamorro-Rengifo et Rafael, 2020 (type species of *Capiguara*) and *C. albertoi* Mendes, Chamorro-Rengifo et Rafael, 2020 (both from Brazil).

### *Tuaia* (*Tuaia*) *pilosa* Gorochov, **sp.n.**
Figs 33, 66–68, 87, 118, 119, 132, 191–193.

ETYMOLOGY. This species name is the Latin word "pilosa" (with hairs) due to the presence of numerous and long hairs on the legs.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, Atalaya Prov., environs of Pitza Vill., 10º54.780´ S, 73º51.054´ W, II.2021, possibly V. Izerskyy (ZIN). *Paratypes*: 2 males, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). Body rather large for this subtribe. Coloration yellowish with brownish tinge (but possibly greenish in living condition) and with following pattern: eyes and anteclypeus light brown; spot almost at centre of each tegmen more or less brown with whitish small marks; anal edge of lateral tegminal field with narrow dark brown interrupted stripe; most part of membranes in stridulatory apparatus of right tegmen and in hind wings transparent (Figs 66–68, 87, 118, 119). Head almost without transverse groove between rostral tubercles and without distinct ocelli (Fig. 66); pronotum with lateral lobes more or less smilar in shape to those of *Ischyra* s. str. and *Tropicophyllum* but with very convex disc, with rather narrow humeral notches and straight ventral edges of lateral lobes (anterior edge of pronotum also almost straight but with very small roundly angular median projection, and posterior edge of disc completely rounded; Figs 67, 68). Legs with numerous long hairs (Figs 133–135); fore leg with 5 short but strong ventral inner spinules on femur, with distinctly widened proximal half of tibia having both tympana immersed, and with only a pair of very small ventral spinules near these tympana (Figs 133, 134); middle leg with 4 ventral outer spinules on femur, and with proximal two thirds of tibia distinctly widened as well as having 2 inner and 3 outer small ventral spinules (Fig. 135); hind leg with 17 outer and 2–4 inner ventral spinules on femur, and with somewhat widened proximal part of tibia. Wings long; tegmina somewhat widened and almost sinuate in shape but with obliquely truncated apical parts (Figs 33, 87), with Sc branches directed mainly laterally and slightly proximally, with RA having only one poorly distinct but comparatively long preapical branch, with base of RS located almost at centre of tegmen, with anterior branch of RS reaching tegminal apex, with posterior branch of RS ending far before this apex, with very short proximal part of RS before its bifurcation, with MA having subdistal part very near posterior RS branch (subdistal part of MA connected with this RS branch by very short crossvein), and with stridulatory apparatus as in Figs 118, 119 (stridulatory vein of left tegmen shortly thickened in middle part and having 46 ventral teeth, but 18 of them larger and located on this thickened part; Fig. 132); hind wings distinctly protruding beyond tegminal apices. Abdomen without distinct posteromedian projections on tergites; abdominal apex as in *Ischyra* s. str. and *Tropicophyllum*, but cercus with 2 apical denticles inequal in length (Figs 191, 193), and genital plate with dictinct and roundly angular but not very wide posteromedian notch (Fig. 192).

*Variations*. In one paratype, upper half of head (including antennae), eyes, pronotum, dorsal field of left (upper) tegmen and proximal half of lateral field in both tegmina almost light brown; posteromedian notch of genital plate insignificantly varied in width.

*Female* unknown.

*Length* in mm. Body 29–32; body with wings 50–53; pronotum 8.2–8.6; tegmina 41–44; hind femora 14.5–15.5.

COMPARISON. The new species is most similar to *T. panacarica* (Brazil) but differs from it in the male tegmina wider and more sinuate as well as with a somewhat wider (longer) obliquely truncated part of their distal portion and a more angular

medial (anal) projection at the base of this truncated part; from *T. poranga* Mendes, Chamorro-Rengifo et Rafael, 2020 (also Brazil), the new species is distinguished by the same tegminal characters (except for the tegminal width which in *T. poranga* is almost as in the new species, but in *T. poranga*, the tegmina are almost not sinuate and with rounded distal portion).

## Genus *Microcentrum* Scudder, 1862

Type species (in original binomen): *Microcentrum affiliatum* Scudder, 1862 (= *Phylloptera* (*Orophus*) *rhombifolia* Saussure, 1859), by subsequent designation [Rehn, Hebard, 1908].

NOTE. This genus is similar and probably most related to three previous genera (*Ishyra*, *Tropicophyllum* and *Tuaya*), as it has a very similar shape of the head (including wide or more or less wide rostrum which is not narrower than scape at least) and a characteristic ovipositor: rather short, curved upwards, with an almost horizontally truncated or widely rounded apical part, and with denticles on this apical part and sometimes also on most part of dorsal edge (Figs 3, 4). But the genus *Microcentrum* is distinguished from these genera by the absence of more or less large and transparent cells in the lateral tegminal field, by an usually less narrow interradial area in this field, and mainly by the male cercus slender and somewhat arcuated but having the distal part with a heavily sclerotized apical spinule (or denticle) and a distinct soft apical lobule often pressed to the previous apical spinule (Figs 314, 315, 318, 319, 322, 323, 326, 327, 328, 331–333, 336, 339, 342, 345, 348, 350, 354, 357, 360, 363, 366) (in all the previous genera and in majority of other genera of Microcentrina, this cercal apex is with only one apical denticle (spine or spinule) or with two apical denticles; but in one aenigmatic species, tentatively placed here in a new subgenus of *Microcentrum* s.l. but possibly belonging to a separate genus, the cercal apex is different).

COMPOSITION. Five subgenera and 56 species listed in subgeneric key below (as well as 2 species with unclear subgeneric position named in remarks to this paragraph):

1. Upper rostral tubercle of head moderately high at base and with more or less roundly oblique dorsal surface in profile (in profile, this tubercle together with lower rostral tubercle forming more or less rounded rostrum; Fig. 387); male cercal apex shortly bifurcated: with one small or very small heavily sclerotized (claw-shaped) spine and one small or very small soft lobule (Figs 314, 315, 318, 319, 322, 323, 326–328, 331–333, 336, 339, 342, 345, 348, 350, 354, 357) .....2
– Upper rostral tubercle of head low at base and with horizontally flattened dorsal surface in profile (in profile, this tubercle together with lower one forming almost rectangular rostrum, because apical part of upper rostral tubercle almost horizontally lamellar; Fig. 388), or male cercal apex with characteristically widened and sclerotized apical part having heavily sclerotized posterior edge and a few angular projections ..... 4
2. Tegmina greenish with one row of more or less sclerotized yellowish or light brownish placulae along each costal edge (Figs 241–245); apical part of male cerci slightly enlarged (more or less thickened or with larger both spine and lobule; Figs 312–331); ovipositor with denticles of lower valve located only on its transversely truncated apex (Figs 368, 370, 372, 374) .....subgenus ***Carnavalia*** Koçak et Kemal, 2008 (= *Linkia* Piza, 1971, homonym; see OSF) [Included species (in original binomen): *Microcentrum angustatum* Brunner-Wattenwyl, 1878 (Venezuela); *M. marginatum* Brunner-Wattenwyl, 1878 from North Brazil (= *M. malkini* Piza, 1980 from Surinam); *M. stridulans* **nom.n.** (= *M. myrtifolium* Saussure et Pictet, 1898 from Brazil, secondary homonym of *M.* (*M.*) *myrtifolium* (Linnaeus, 1758)); *M. syntechnoides* Rehn, 1903 (Mexico); *M. philammon* Rehn, 1918 (Costa Rica); *Parableta bicentenaria* Piza, 1968, **sp.dist.** (= *Linkia linki* Piza, 1971 — type species of *Linkia* and *Carnavalia*) (both from South Brazil); *Microcentrum xavieri* Sovano et Cadena-Castañeda, 2015 (North Brazil); *M. scudderi* Cadena-Castañeda, 2015 (Colombia); *M.* (*C.*) *grandiplacula* **sp.n.**; *M.* (*C.*) *morona* **sp.n.**; *M.* (*C.*) *miniplacula* **sp.n.**; *M.* (*C.*) *latistylus* **sp.n.**; possibly *Phylloptera lanceolata* Burmeister, 1838 from Brazil (=*Phylloptera* (*Orophus*) *salvifolia* Saussure, 1859 from North Brazil).]
– Tegmina greenish but without sclerotized yellowish or light brownish placulae along costal edge (Figs 246–254, 256–260); apical part of male cerci practically not enlarged (almost not thickened and with smaller both spine and lobule; Figs 332–357, 361–363); ovipositor with diverse apex (Figs 376, 378, 380, 382, 384, 386) ..... 3
3. Upper rostral tubercle of head with slight dorsal longitudinal concavity or without it (Figs 226, 227, 229, 230, 232, 233, 235, 236, 238, 239); ovipositor with lower valve having transversely truncated apex and denticles only on this apex (Figs 376, 378, 380)..... subgenus ***Microcentrum*** s.str. (= *Ctenophlebia* Stål, 1874, **syn.n.**; = *Boroseiyela* Mendes, Chamorro-Rengifo et Rafael, 2020, **syn.n.**) [Included species (in original binomen): *Gryllus* (*Tettigonia*) *myrtifolius* Linnaeus, 1758 (Surinam) — type species of *Ctenophlebia*; *G.* (*Locusta*) *incarnatus* Stoll, 1813 (South America, Surinam or Cuba) (= *G.* (*Tettigonia*) *laurifolius* Stoll, 1813 from Surinam; = *Microcentrum pallidum* Brunner-Wattenwyl, 1878 from Caribbean; = *M. triangulatum* Brunner-Wattenwyl, 1878 from Caribbean); *Ph.* (*Orophus*) *rhombifolia* Saussure, 1859 from USA (= *M. affiliatum* Scudder, 1862 from USA — type species of *Microcentrum*); *M. concisum* Brunner-Wattenwyl, 1878 (Colombia); *Orophus migrolineatus* Brunner, 1915 (Bolivia); *M. suave* Hebard, 1923 (North Mexico); *M. simplex* Hebard, 1932 (Guatemala and Mexico); *M. minus* Strohecker, 1952 (USA); *M. latifrons* Spooner, 1989 (USA); *M. stridulomaculosum* Cadena-Castañeda, 2014 (Guatemala); *M. lobophylloides* Cadena-Castañeda, 2014 (Colombia); *M. tecactli* Barrientos-Lozano, Fernández-Azuara et Rocha-Sánchez, 2018 (Mexico); 3 species from North Brazil described by Mendes *et al*. [2020] in the "genus *Boroseiyla*" (including its type species); *M.* (*M.*) *jalisco* **sp.n.**; *M.* (*M.*) *sympatricum* **sp.n.**; *M.* (*M.*) *xerophilum* **sp.n.**; *M.* (*M.*) *selva* **sp.n.**; *M.* (*M.*) *lacandonense* **sp.n.**; M. (M.) *nitidum* **sp.n.**; possibly *M. championi* Saussure et Pictet, 1898 (Panama), *M. lucidum* Brunner-Wattenwyl, 1878 (North Brazil), *M. californicum* Hebard, 1932 (USA), *M. veraguae* Hebard, 1933 (Panama), *M. nauticum* Piza, 1980 (North Brazil), *M. surinamense* Piza, 1980 (Surinam) and *M. amacayacu* Cadena-Castañeda et Sovano, 2015 (Colombia).]
– Upper rostral tubercle of head with well-defined dorsal longitudinal concavity (Figs 392, 393, 395–397, 399, 400); ovipositor with lower valve having ventroapical part roundly curved or obliquely truncated, and with denticles located on this part or on it and slightly before it (Figs 382, 384, 386) ..... subgenus ***Rotundovapex*** **Gorochov, subgen.n.** [Included species (in original binomen): *Phylloptera retinervis* Burmeister, 1838 from North America (= *Phylloptera* (*Orophus*) *salicifolia* Saussure, 1859 from USA); *Phylloptera* (*Orophus*) *totonaca* Saussure, 1859 (Mexico) —

типовой вид *Rotundovapex*; *Microcentrum decoratum* Walker, 1869 (Dominican Republic); *Microcentrum ligatum* Brunner-Wattenwyl, 1891 (Colombia); *M. stylatum* Hebard, 1932 (Mexico); *M. louisianum* Hebard, 1939 (USA: Louisiana); *M.* (*R.*) *tamaulipas* **sp.n.**; *M.* (*R.*) *foliolum* **sp.n.**; possibly *Ischyra frutetorum* Saussure et Pictet, 1898 (Guatemala), *I. vepretorum* Saussure et Pictet, 1898 (Central America), *M. nigrosignatum* Piza, 1974 (Costa Rica, Panama) and *M. w-signatum* Piza, 1980 (South Brazil). Etymology: from Latin words "rotundatus" (rounded) and "apex" (top) as well as from part of morphological term "ovipositor" due to rounded ovipositor apex.).

4. Upper rostral tubercle of head low at base and with horizontally flattened dorsal surface in profile (in profile, this tubercle together with lower one forming almost rectangular rostrum, because apical part of upper rostral tubercle almost horizontally lamellar; Fig. 388); male cercal apex shortly bifurcated: with one very small heavily sclerotized (claw-shaped) spine and one very small soft lobule (Figs 358–360) ..... subgenus ***Paradoxirostrum*** **Gorochov, subgen.n.** [Included species (in original binomen): *Microcentrum* (*Paradoxirostrum*) *ornatum* **sp.n.** — type species of subgenus; possibly *M. cribrosum* Saussure et Pictet, 1898 (Mexico). Etymology: from Latinized Greek word "paradoxus" (paradoxical) and morphological term "rostrum" due to unusual structure of head rostrum.]

– Upper rostral tubercle of head moderately high at base and with more or less roundly oblique dorsal surface in profile (in profile, this tubercle together with lower rostral tubercle forming more or less rounded rostrum; almost as in Fig. 387); male cercal apex with characteristically widened and sclerotized apical part having heavily sclerotized posterior edge and a few angular projections ..... ..... subgenus ***Securicercus*** **Gorochov, subgen.n.** [Included species (in original binomen): *Microcentrum securiferum* Brunner-Wattenwyl, 1878 (Panama) — type species of subgenus. Etymology: from Latin word "securis" (axe) and morphological term "cercus" due to characteristic shape of male cercus.]

REMARKS. Several other species belong to *Microcentrum* s.l. or were attributed to this genus in OSF, but their subgeneric or even generic positions are very problematical: *M. martinicum* Saussure et Pictet, 1898 (Carribean) is very similar to *Carnavalia* representatives but practically lacks placulae along the costal tegminal edge (the presence of these placulae is a most distinct diagnostic character of this subgenus); *M. gracilissimum* **sp.n.**, also belonging to this genus, has unclear subgeneric position; *M. erosum* Brunner-Wattenwyl, 1891 (North Brazil) is possibly a member of *Ischyra* s.l. or *Tropicophyllum* s.l.; some species are insufficiently described, and their systematic position is very unclear: *Locusta* (*Phylloptera*) *acorifolia* Haan, 1843 (Brazil); *Orophus peruvianus* Scudder, 1875 (Перу); *Microcentrum elephas* Brunner-Wattenwyl, 1878 (Paraguay); *M. punctifrons* Brunner-Wattenwyl, 1891 (French Guiana); *M. costaricense* Piza, 1975 (= *M. nigrosignatum* Piza, 1974, homonym; see OSF). Moreover, *Securicercus* may turn out to be an independent genus, but this decision requests additional study.

### *Microcentrum* (*Carnavalia*) *philammon tuxtlas* Gorochov, **sp.n.**

Figs 142, 211–213, 241, 262, 263, 294, 312–315, 367, 368.

ETYMOLOGY. The species is named after the locality where it was collected.

MATERIAL. *Holotype* male, **Mexico**: Veracruz State, 15–20 km NE of Catemako Town, Los Tuxtlas (biostation of Mexico University), 2 km from Mexican Gulf, primary forest on hills, at light, 6–17.XI.2006, A. Gorochov, A. Ovtschinnikov (ZIN). *Paratypes*: 3 males, 3 females, same data as for holotype (ZIN); 1 female, same locality and method of collecting, but 16.IX.1989, I. Kerzhner (ZIN).

DECRIPTION. *Male* (holotype). Body rather large and almost uniformly yellowish green, but with light brown eyes and most part of antennal flagellum (its base yellowish, but its distal half almost brown), with intensively yellow ocelli and placulae on tegmina along proximal half of costal edge, with transparent most part of membranes in right dorsal tegminal field, and with blackish both articulation at base of hind tibia and claw-shaped spine at apex of cercus (Figs 142, 211–213, 241, 262, 263, 312–315). Head with rather narrow rostrum (apical part of upper rostral tubercle almost as wide as scape, and space between lateral ocelli barely narrower than scape), and lateral ocelli distinctly larger than median ocellus (Fig. 211); pronotum with disc having hardly sinuate anterior edge and widely rounded posterior edge as well as lateral parts roundly turning into lateral lobes (these lobes short and high, with anteroventral edges rounded, and with humeral notches narrow and rather deep; Figs 212, 213); legs with both tympana open and oval (but inner one somewhat immersed); tegmina long (strongly protruding beyond apices of hind femora) and rather narrow, weakly widened in middle part, with 1 row of moderately large placulae along poroximal half of each costal edge, with 2 longitudinal (but very weakly oblique) branches of RA (Fig. 241), and with stridulatory apparatus as in Figs 262, 263 (this apparatus having stridulatory vein of left tegmen rather short and thick, nearest vein strongly inflated in lateral part and pressed to previous vein but not fused with it, mirror rather long and narrow in both tegmina, and following left ventral stridulatory teeth: 17–18 small and light medial teeth gradually increasing to middle part of vein, 6 large dark teeth in this middle part, 7 dark but smaller ones located more laterally, and 6–7 light and very small most lateral teeth; Fig. 294); abdomen without distinct median projections on tergites, with transversely straight but somewhat convex posterior edge of last tergite, almost triangular epiproct, smaller and lobule-like paraprocts, barely curved cerci (each cercus rather short, and with distinctly widened distal portion having more or less triangular ventromedial lobule as well as long and rather narrow claw-shaped spine with almost acute apex; Figs 312, 314, 315), and distinctly longer (than cerci) genital plate having following features: elongated and narrowed distal part, moderately deep and not very narrow posteromedian notch, and rather long styles (these styles almost 1.5 times as long as latter notch; Fig. 313).

*Variations*. Size of yellow tegminal placulae insignificantly varied (from small to moderately large); posteromedian notch of genital plate sometimes barely wider, and its proximal part varied from rounded to almost angular.

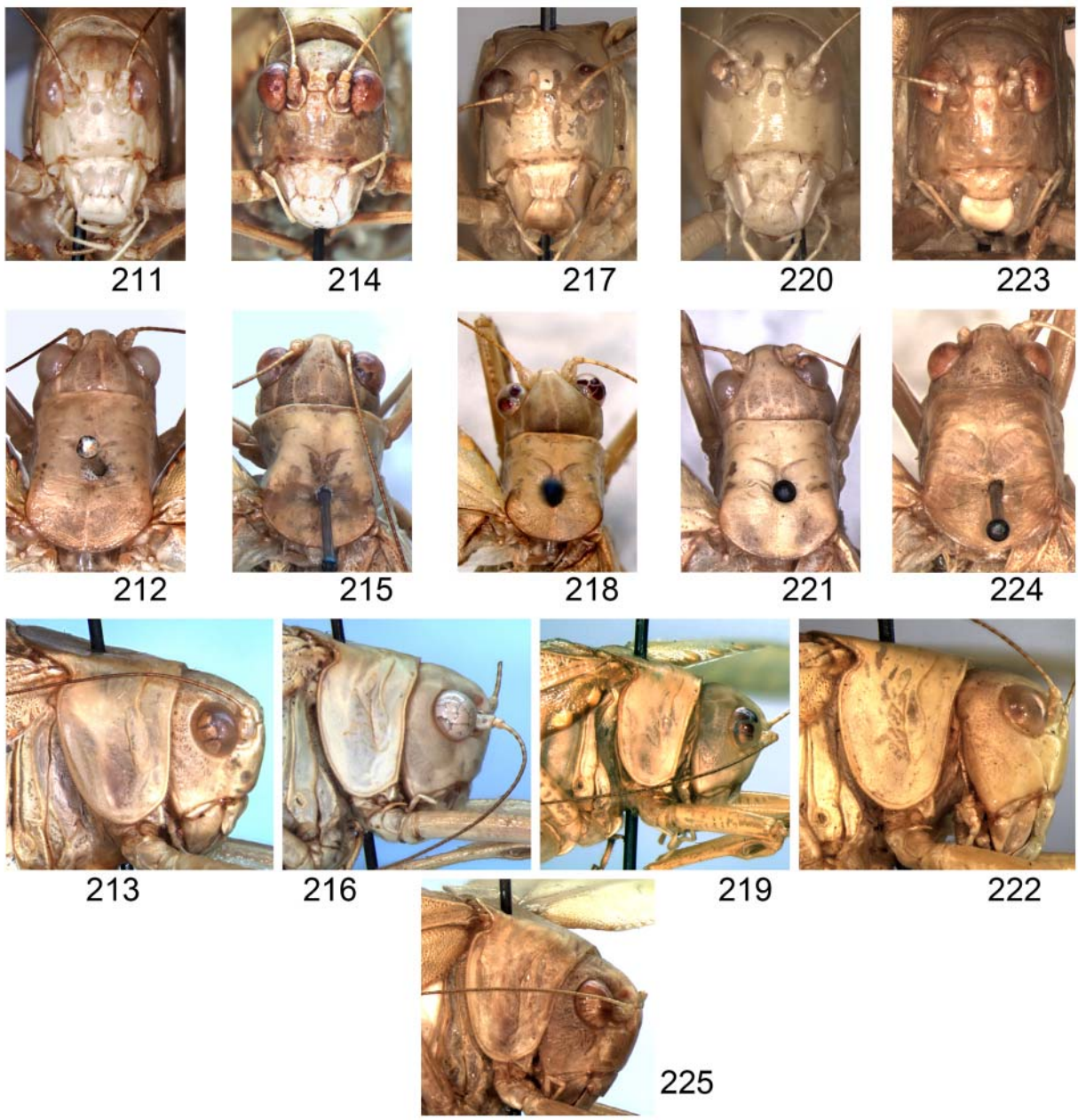
*Female*. Coloration and structure of body as in males, but tegmina without normal stridulatory apparatus, cerci clearly shorter and simpler (elongately conical with very thin apical part), genital plate with roundly keel-like median part and rather narrowly rounded apical portion which in profile obliquely cutting in dorsal part (Figs 367, 368); ovipositor as in Fig. 368.

*Length* in mm. Body: male 25–30, female 28–32; body with wings: male 59–62, female 63–67; pronotum: male 6.8–7.2, female 6.9–7.4; tegmina: male 45–47, female 46–50; hind femora: male 27.5–29, female 28–32; ovipositor 5.5–6.

COMPARISON. The new subspecies is distinguished from the nominotypical one by larger lateral ocelli (their diam-

eter is almost 1.5 times as great as that of the median ocellus in the new subspecies, but all the ocelli approximately are equal to each other in the nominotypical one), by a shorter proximal part of tegminal RS before the place of RS bifurcation (this part of RS is almost equal to the distance between base of RS and the thickened proximal part of Sc in the new species but clearly longer than this distance in *M. ph. philammon*), and by the vein, nearest to the left stridulatory vein, insignificantly thicker; these taxa may be two different species, because the stridulatory teeth in the male left tegmen are very characteristic in the new taxon but unknown in *M.* (*C.*) *ph. philammon.*

Differences of the new species from *M.* (*C.*) *angustatum* may only be found after the lectotype designation, since the syntypes of this species, although they are from the same lo-




**Figs 211–225.** *Microcentrum* (*Carnavalia*), male: 211–213 — *M.* (*C.*) *philammon tuxtlas* **subsp.n.** (211, 212 — holotype); 214–216 — *M.* (*C.*) *grandiplacula* **sp.n.** (214, 215 — holotype); 217–219 — *M.* (*C.*) *morona* **sp.n.**; 220–222 — *M.* (*C.*) *miniplacula* **sp.n.** (holotype); 223–225 — *M.* (*C.*) *latistylus* **sp.n.** Head in front (211, 214, 217, 220, 223); head with pronotum and partly fore legs from above (212, 215, 218, 221, 224) and from side (213, 216, 219, 222, 225).

**Рис. 211–225.** *Microcentrum* (*Carnavalia*), самец: 211–213 — *M.* (*C.*) *philammon tuxtlas* **subsp.n.** (211, 212 — голотип); 214–216 — *M.* (*C.*) *grandiplacula* **sp.n.** (214, 215 — голотип); 217–219 — *M.* (*C.*) *morona* **sp.n.**; 220–222 — *M.* (*C.*) *miniplacula* **sp.n.** (голотип); 223–225 — *M.* (*C.*) *latistylus* **sp.n.** Голова спереди (211, 214, 217, 220, 223); голова с переднеспинкой и частично передними ногами сверху (212, 215, 218, 221, 224) и сбоку (213, 216, 219, 222, 225).

cality in Venezuela, evidently belong to different species (see photos for *M. angustatum* in OSF): the first syntype is a male with all wings spread and a well visible stridulatory apparatus in both tegmina (the stridulatory vein on its left tegmen is rather thin: the area between this vein and the anal vein is almost trice as wide as this stridulatory vein); but the second syntype is a male with folded wings and an invisible stridulatory apparatus on its right tegmen (the stridulatory vein on its left tegmen is thicker, and the area between this vein and the anal vein is approximately 1.5 times as wide as this stridulatory vein). Therefore, for the aforementioned comparison it is necessary to select the true *M.* (*C.*) *angustatum*, and here I des-


**Figs 226–240.** *Microcentrum* (*Microcentrum*), male: 226–228 — *M.* (*M.*) *jalisco* **sp.n.** (226, 227 — holotype); 229–231 — *M.* (*M.*) *xerophilum* **sp.n.** (holotype); 232–234 — *M.* (*M.*) *selva* **sp.n.** (holotype); 235–237 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (holotype); 238–240 — *M.* (*M.*) *nitidum* **sp.n.** (holotype). Head in front (226, 229, 232, 235, 238); head with pronotum and partly fore legs from above (227, 230, 233, 236, 239) and from side (228, 231, 234, 237, 240).

**Рис. 226–240.** *Microcentrum* (*Microcentrum*), самец: 226–228 — *M.* (*M.*) *jalisco* **sp.n.** (226, 227 — голотип); 229–231 — *M.* (*M.*) *xerophilum* **sp.n.** (голотип); 232–234 — *M.* (*M.*) *selva* **sp.n.** (голотип); 235–237 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (голотип); 238–240 — *M.* (*M.*) *nitidum* **sp.n.** (голотип). Голова спереди (226, 229, 232, 235, 238); голова с переднеспинкой и частично передними ногами сверху (227, 230, 233, 236, 239) и сбоку (228, 231, 234, 237, 240).

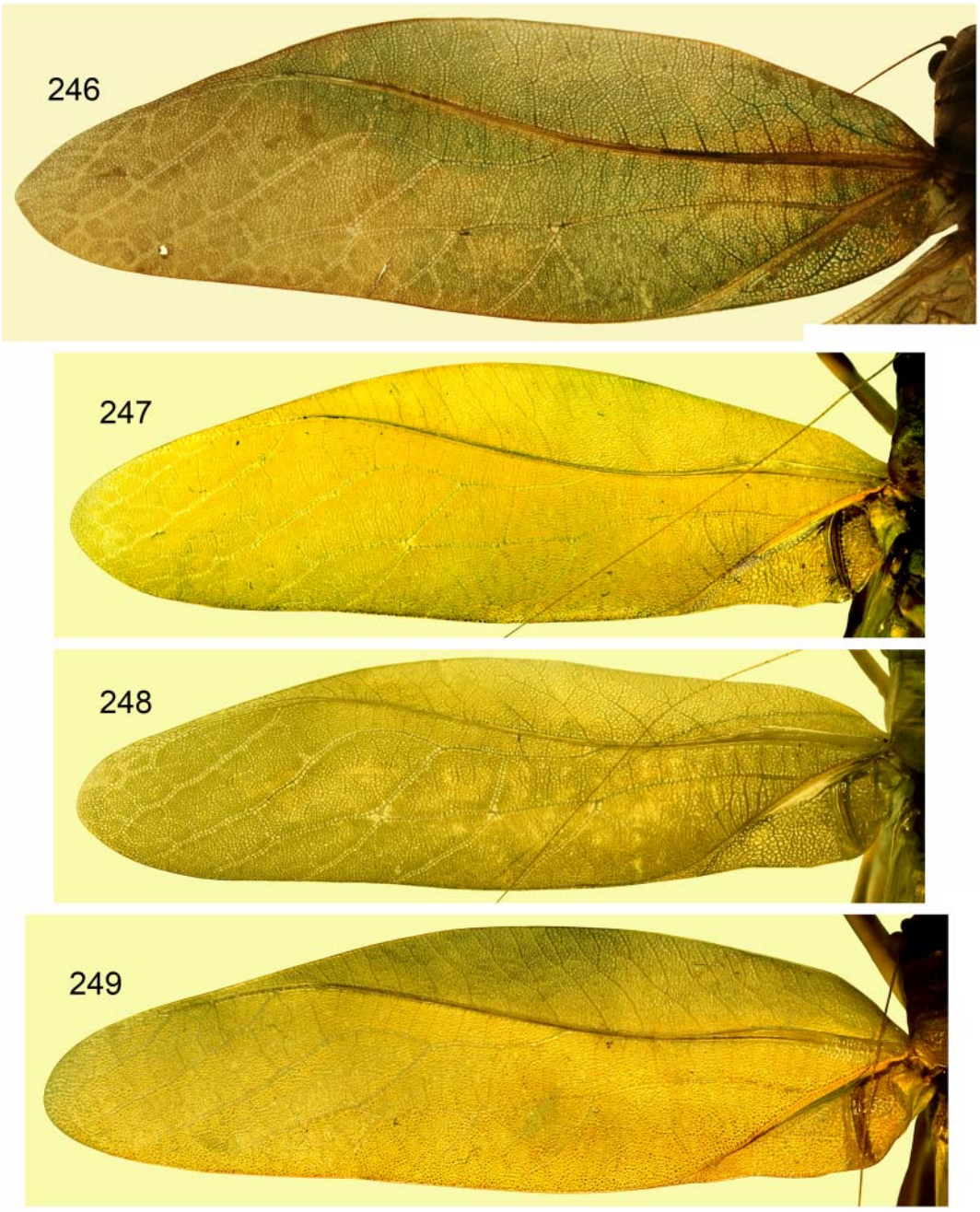
ignate the first male syntype (with all wings spread) as the **lectotype** of this species. Now, the new species is distinguished from this lectotype by distinctly thicker dorsolateral parts of both the stridulatory vein and the nearest vein in the male left tegmen, as well as by a clearly longer mirror in the right tegmen (in the new species, the mirror is not shorter than the width of the dorsal tegminal field; but in *M. angustatum*, this mirror is distinctly shorter than the width of the latter field).

From another but similar Mexican species (*M. syntechnoides*), the new species differs in the head rostrum clearly narrower (*vs* it is almost twice as wide as the scape), the tegmina with subapical RA branch located obliquely but more lon-


**Figs 241–245.** *Microcentrum* (*Carnavalia*), male left tegmen: 241 — *M.* (*C.*) *philammon tuxtlas* **subsp.n.** (holotype); 242 — *M.* (*C.*) *grandiplacula* **sp.n.** (holotype); 243 — *M.* (*C.*) *morona* **sp.n.**; 244 — *M.* (*C.*) *miniplacula* **sp.n.** (holotype); 245 — *M.* (*C.*) *latistylus* **sp.n.**
**Рис. 241–245.** *Microcentrum* (*Carnavalia*), левое надкрылье самца: 241 — *M.* (*C.*) *philammon tuxtlas* **subsp.n.** (голотип); 242 — *M.* (*C.*) *grandiplacula* **sp.n.** (голотип); 243 — *M.* (*C.*) *morona* **sp.n.**; 244 — *M.* (*C.*) *miniplacula* **sp.n.** (голотип); 245 — *M.* (*C.*) *latistylus* **sp.n.**

gitudinally (*vs* it is located also obliquely but distinctly more transversely; see photo for *M. syntechnoides* holotype in OSF), and the male dorsal tegminal fields light (*vs* they are brown to dark brown or with brown to light brown areas) as well as with the following features: the stridulatory vein in the left tegmen is shorter, the nearest vein is clearly more inflated in its lateral part, and the mirror is shorter in both tegmina.

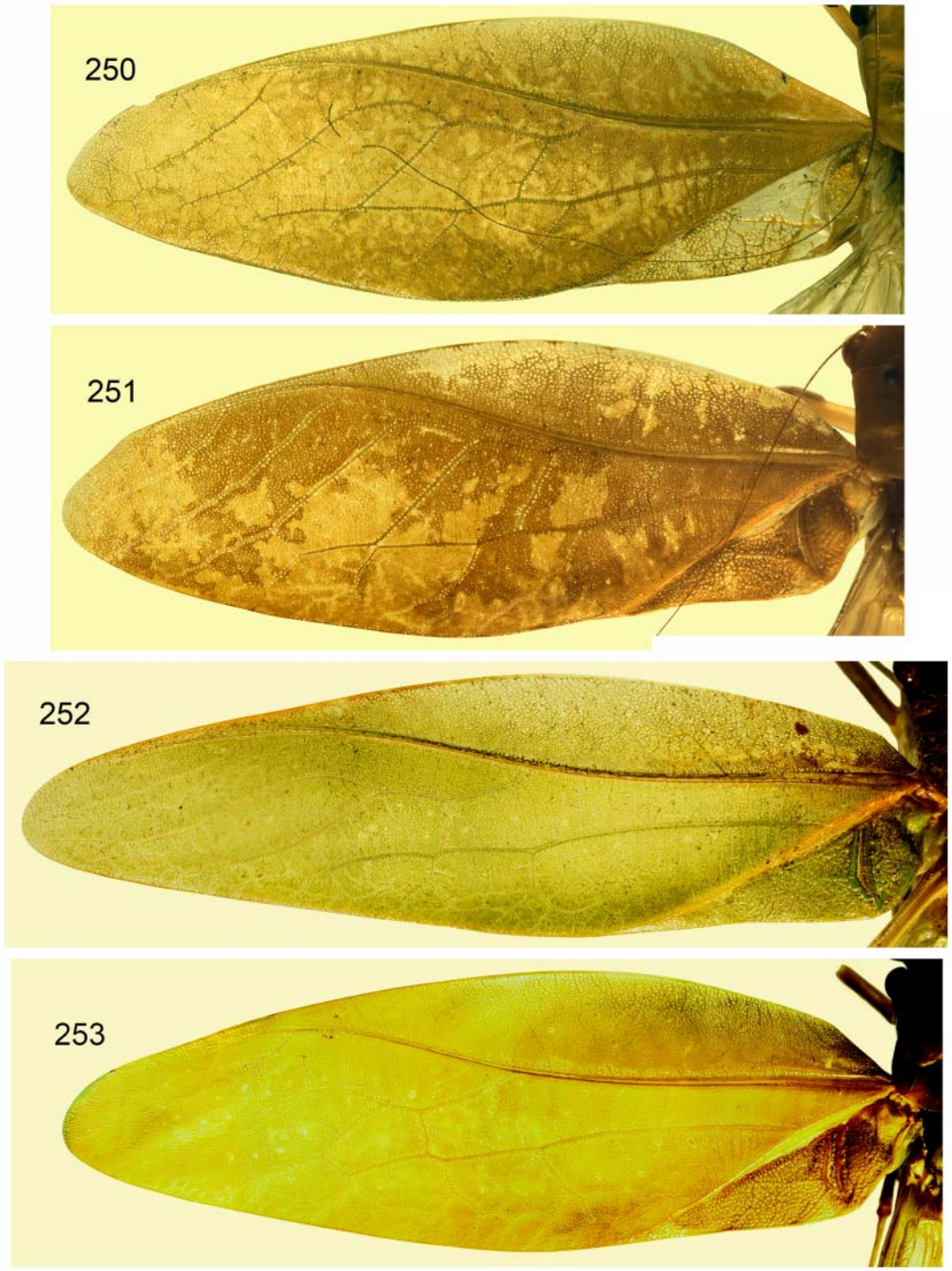
From *M.* (*C.*) *bicentenarium* (South Brazil), the new species differs in the left male tegmen with a lighter (yellowish or greenish but not brown) dorsal field and distinctly thicker dorsolateral parts of both the stridulatory vein and the nearest vein, and possibly in the female genital plate with a longitudinally convex ventromedian part (*vs* this part looks as somewhat concave in the proximal half; see photo for "*Linkia linki*" holotype in OSF). The following "taxa" were synonymized with this species name: "*Phylloptera lanceolata*" from an unkown locality in Brazil, "*Phylloptera* (*Orophus*) *salvifolia*" from North Brazil and "*Linkia linki*" from South Brazil. But this synony-



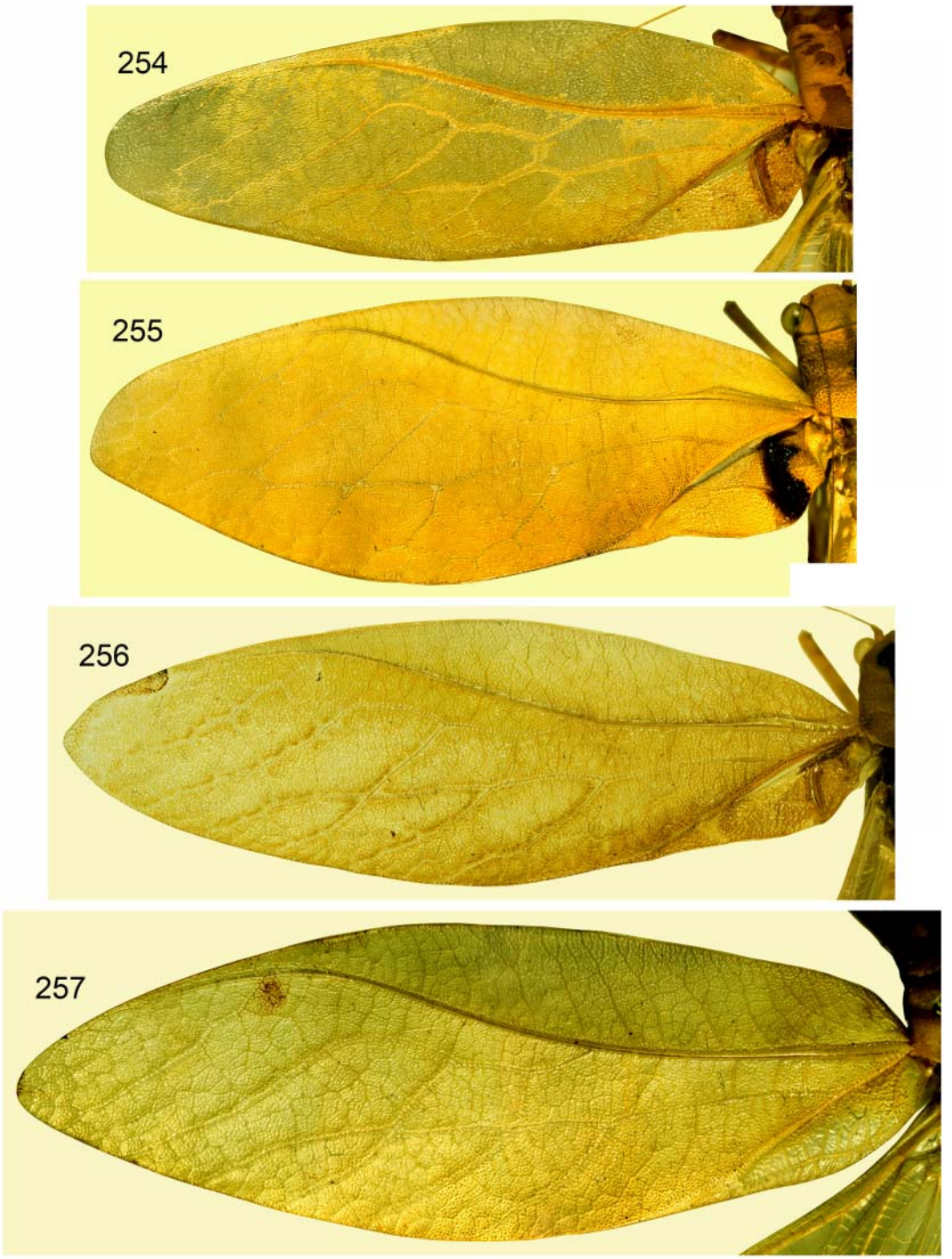

**Figs 246–249.** *Microcentrum* (*Microcentrum*), male left tegmen: 246 — *M.* (*M.*) *rhombifolium*; 247 — *M.* (*M.*) *jalisco* **sp.n.** (holotype); 248 — *M.* (*M.*) *sympatricum* **sp.n.**; 249 — *M.* (*M.*) *simplex*.
**Рис. 246–249.** *Microcentrum* (*Microcentrum*), левое надкрылье самца: 246 — *M.* (*M.*) *rhombifolium*; 247 — *M.* (*M.*) *jalisco* **sp.n.** (голотип); 248 — *M.* (*M.*) *sympatricum* **sp.n.**; 249 — *M.* (*M.*) *simplex*.

my is not evident: the first and second names, synonymized with each other by Brunner-Wattenwyl [1878], belong to species with wider tegmina than in the new species; the two other species, described by Piza, are synonymized with each other and with *M.* (*C.*?) *lanceolatum* by Cadena-Castañeda [2014], but their tegmina are narrower than in *M.* (*C.*?) *lanceolatum* and more similar to those of the new species.

From *M.* (*C.*) *marginipennis*, the new species is distinguished by the same characters of the stridulatory and nearest veins in the male left tegmen as from *M.* (*C.*) *bicente-*




**Figs 250–253.** *Microcentrum* (*Microcentrum*), male left tegmen: 250 — *M.* (*M.*) *selva* **sp.n.** (holotype); 251 — *M.* (*M.*) *lacandonense* **sp.n.**; 252 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (holotype); 253 — *M.* (*M.*) *nitidum* **sp.n.** (holotype).
**Рис. 250–253.** *Microcentrum* (*Microcentrum*), левое надкрылье самца: 250 — *M.* (*M.*) *selva* **sp.n.** (голотип); 251 — *M.* (*M.*) *lacandonense* **sp.n.**; 252 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (голотип); 253 — *M.* (*M.*) *nitidum* **sp.n.** (голотип).

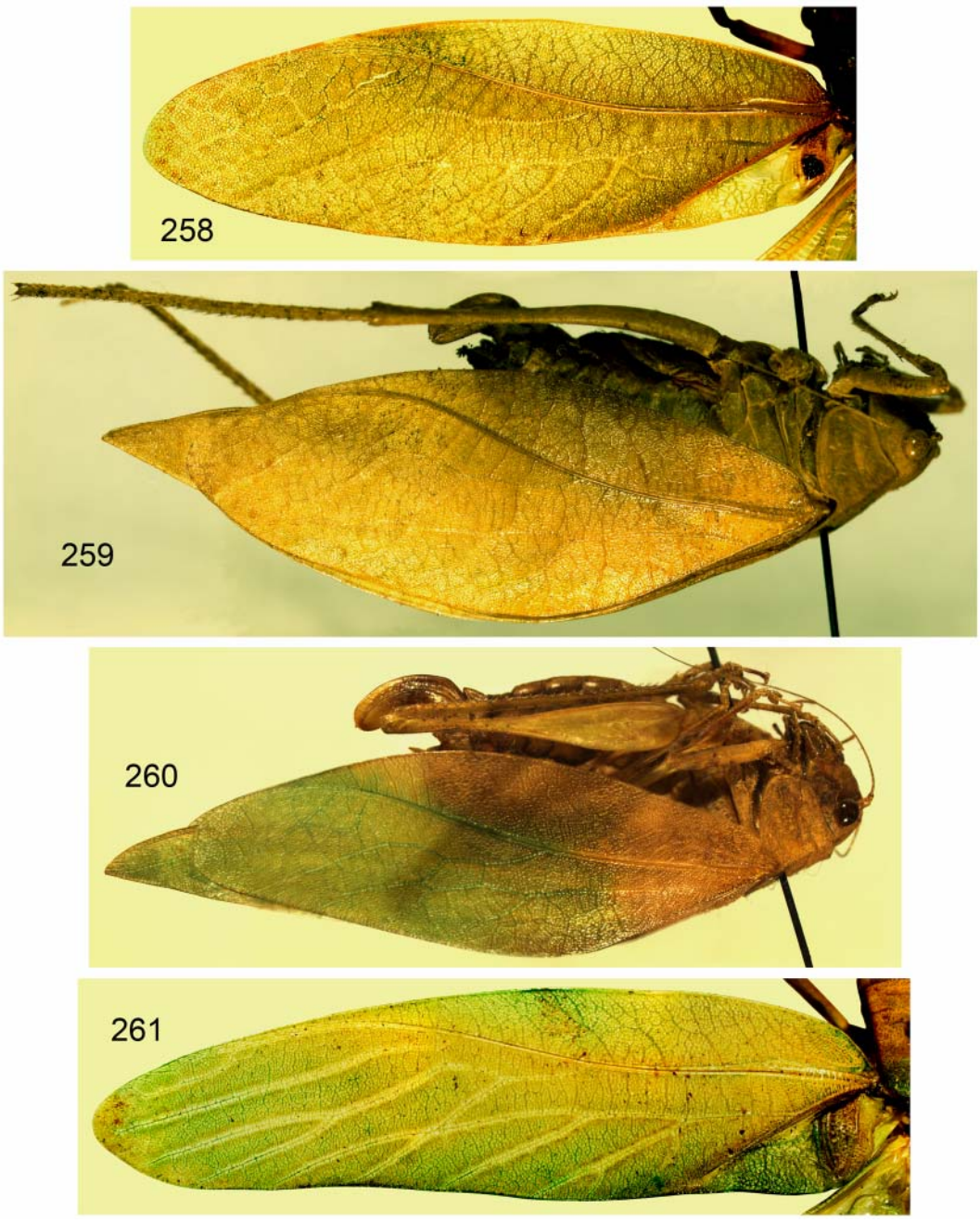



**Figs 254–257.** *Microcentrum*, tegmina: 254 — *M*. (*Microcentrum*) *xerophilum* **sp.n.** (male holotype); 255 — *M*. (*Paradoxirostrum*) *ornatum* **sp.n.** (male holotype); 256, 257 — *M*. (*Rotundovapex*) *totonacum*, male neotype (256) and female (257). Male left tegmen (254–256); female right tegmen, reversed (257).
**Рис. 254–257.** *Microcentrum*, надкрылья: 254 — *M*. (*Microcentrum*) *xerophilum* **sp.n.** (самец-голотип); 255 — *M*. (*Paradoxirostrum*) *ornatum* **sp.n.** (самец-голотип); 256, 257 — *M*. (*Rotundovapex*) *totonacum*, самец-неотип (256) и самка (257). Левое надкрылье самца (254–256); правое надкрылье самки, перевернуто (257).

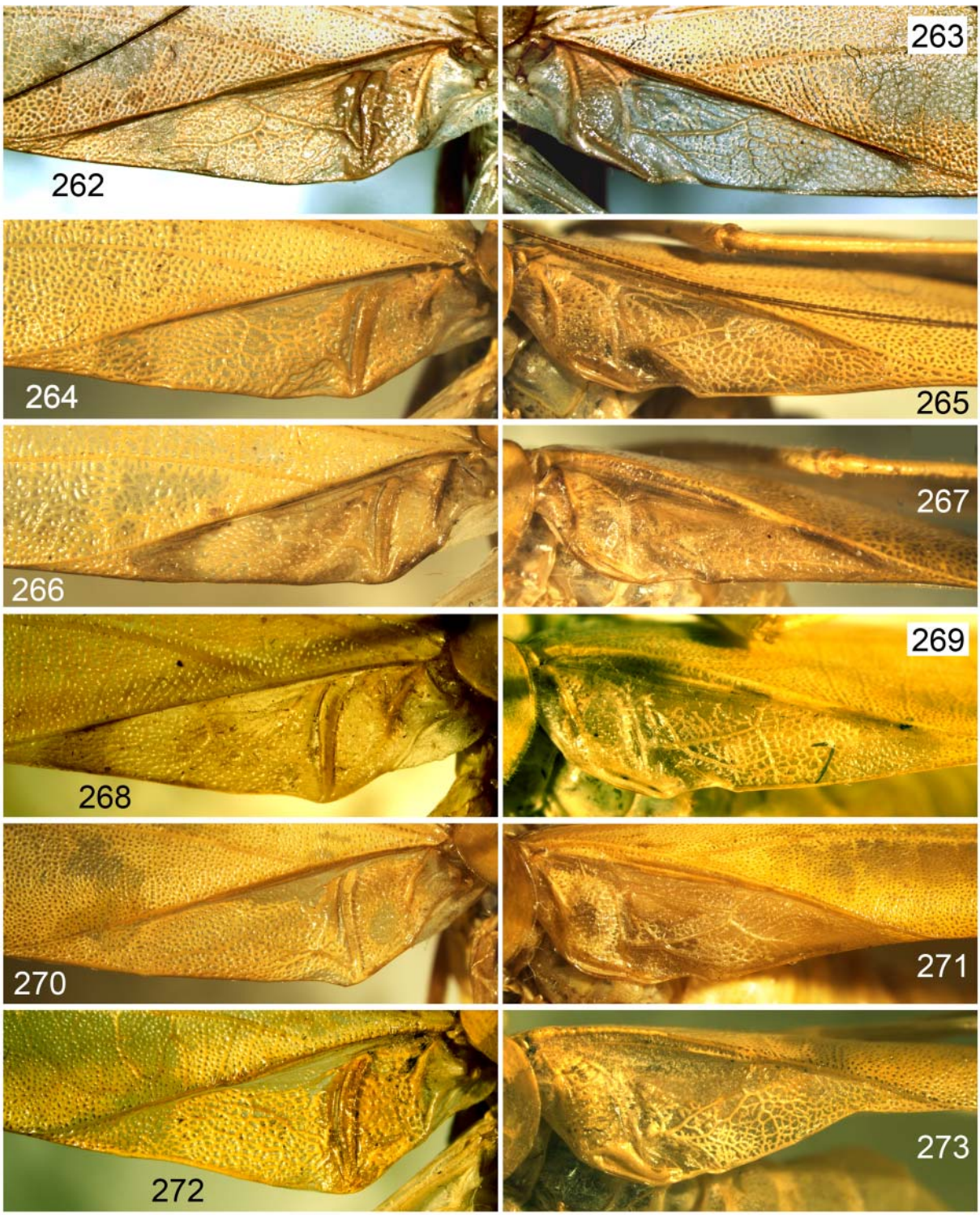
*narium* (except for their coloration), by the longer mirror in this tegmen, and by somewhat narrower tegmina (especially in female). The new species differs also from "*M. malkini*", synonymized with *M. marginipennis* by Cadena-Caastañeda [2014], in the distinctly longer mirror of the right male tegmen (see photo of "*M. malkini*" holotype in OSF).

From *M.* (*C.*) *scudderi*, the new species is distinguished by larger body, a thinner and acute claw-shaped spine at the apex of the male cercus (*vs* this spine is somewhat thicker and weakly bifurcated at the apex), a less deep posteromedian notch of the male genital plate (the styles are almost as long as this notch in *M. scudderi* and approximately 1.5 times as long as this notch in *M. ph. tuxtlas* **subsp.n.**) and the female genital plate with a more obliquely cutting posterior part in the profile (*vs* this part is almost transversely truncated in the profile).

From *M.* (*C.*) *stridulans* **nom.n.** (Brazil), the new species differs in distinctly narrower dorsal fields of the male tegmina, a clearly shorter stridulatory vein of the left tegmen, a narrow-




**Figs 258–261.** *Microcentrum*: 258 — *M.* (*Rotundovapex*) *nigrosignatum*; 259 — *M.* (*R.*) *foliolum* **sp.n.**; 260 — *M.* (*R.*) *tamaulipas* **sp.n.**; 261 — *M. gracilissimum* **sp.n.** Male left tegmen (258, 261); female body with wings from side (259, 260).
**Рис. 258–261.** *Microcentrum*: 258 — *M.* (*Rotundovapex*) *nigrosignatum*; 259 — *M.* (*R.*) *foliolum* **sp.n.**; 260 — *M.* (*R.*) *tamaulipas* **sp.n.**; 261 — *M. gracilissimum* **sp.n.** Левое надкрылье самца (258, 261); тело самки с крыльями сбоку (259, 260).




**Figs 262–273.** *Microcentrum*, male stridulatory apparatus: 262, 263 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.** (holotype); 264, 265 — *M.* (*C.*) *grandiplacula* **sp.n.** (holotype); 266, 267 — *M.* (*C.*) *morona* **sp.n.**; 268, 269 — *M.* (*C.*) *miniplacula* **sp.n.** (holotype); 270, 271 — *M.* (*C.*) *latistylus* **sp.n.**; 272, 273 — *M.* (*Microcentrum*) *xerophilum* **sp.n.** (holotype). Left (262, 264, 266, 268, 270, 272) and right (263, 265, 267, 269, 271, 273) tegmina.

**Рис. 262–273.** *Microcentrum*, стридуляционный аппарат самца: 262, 263 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.** (голотип); 264, 265 — *M.* (*C.*) *grandiplacula* **sp.n.** (голотип); 266, 267 — *M.* (*C.*) *morona* **sp.n.**; 268, 269 — *M.* (*C.*) *miniplacula* **sp.n.** (голотип); 270, 271 — *M.* (*C.*) *latistylus* **sp.n.**; 272, 273 — *M.* (*Microcentrum*) *xerophilum* **sp.n.** (голотип). Левое (262, 264, 266, 268, 270, 272) и правое (263, 265, 267, 269, 271, 273) надкрылья.


**Figs 274–285.** *Microcentrum* (*Microcentrum*), male stridulatory apparatus: 274, 275 — *M.* (*M.*) *jalisco* **sp.n.** (holotype); 276, 277 — *M.* (*M.*) *sympatricum* **sp.n.**; 278, 279 — *M.* (*M.*) *selva* **sp.n.** (holotype); 280, 281 — *M.* (*M.*) *lacandonense* **sp.n.**; 282, 283 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (holotype); 284, 285 — *M.* (*M.*) *nitidum* **sp.n.** (holotype). Left (274, 276, 278, 280, 282, 284) and right (275, 277, 279, 281, 283, 285) tegmina.

**Рис. 274–285.** *Microcentrum* (*Microcentrum*), стридуляционный аппарат самца: 274, 275 — *M.* (*M.*) *jalisco* **sp.n.** (голотип); 276, 277 — *M.* (*M.*) *sympatricum* **sp.n.**; 278, 279 — *M.* (*M.*) *selva* **sp.n.** (голотип); 280, 281 — *M.* (*M.*) *lacandonense* **sp.n.**; 282, 283 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (голотип); 284, 285 — *M.* (*M.*) *nitidum* **sp.n.** (голотип). Левое (274, 276, 278, 280, 282, 284) и правое (275, 277, 279, 281, 283, 285) надкрылья.

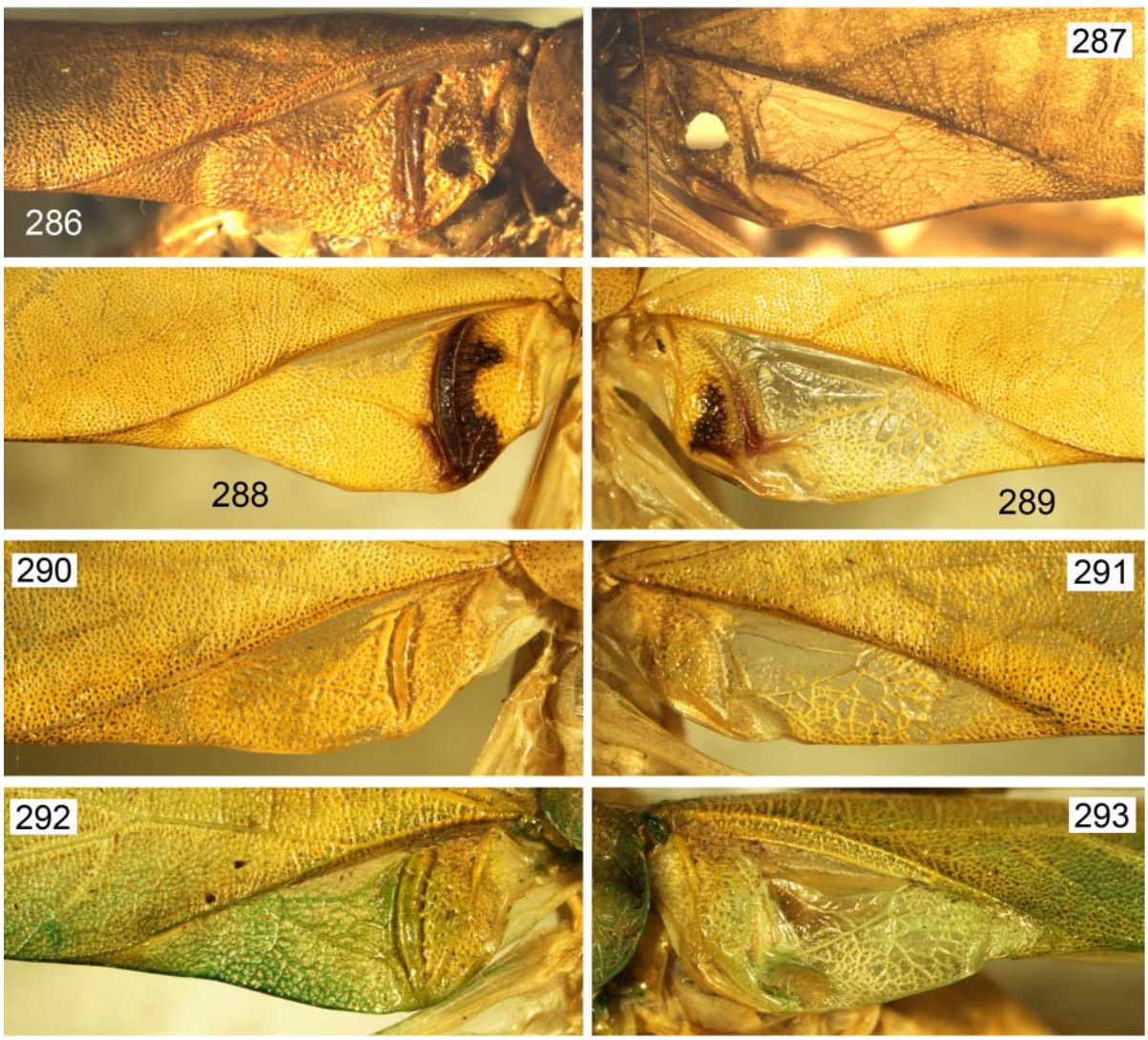
er mirror of the right tegmen, and a somewhat more widened distal portion of the male cercus. And from *M.* (*C.*) *xavieri*, the new species differs in the larger body, less spotted coloration and smaller yellow placulae along the costal tegminal edge.

### *Microcentrum* (*Carnavalia*) *grandiplacula* Gorochov, **sp.n.**

Figs 143, 214–216, 242, 264, 265, 295, 316–319, 369, 370.

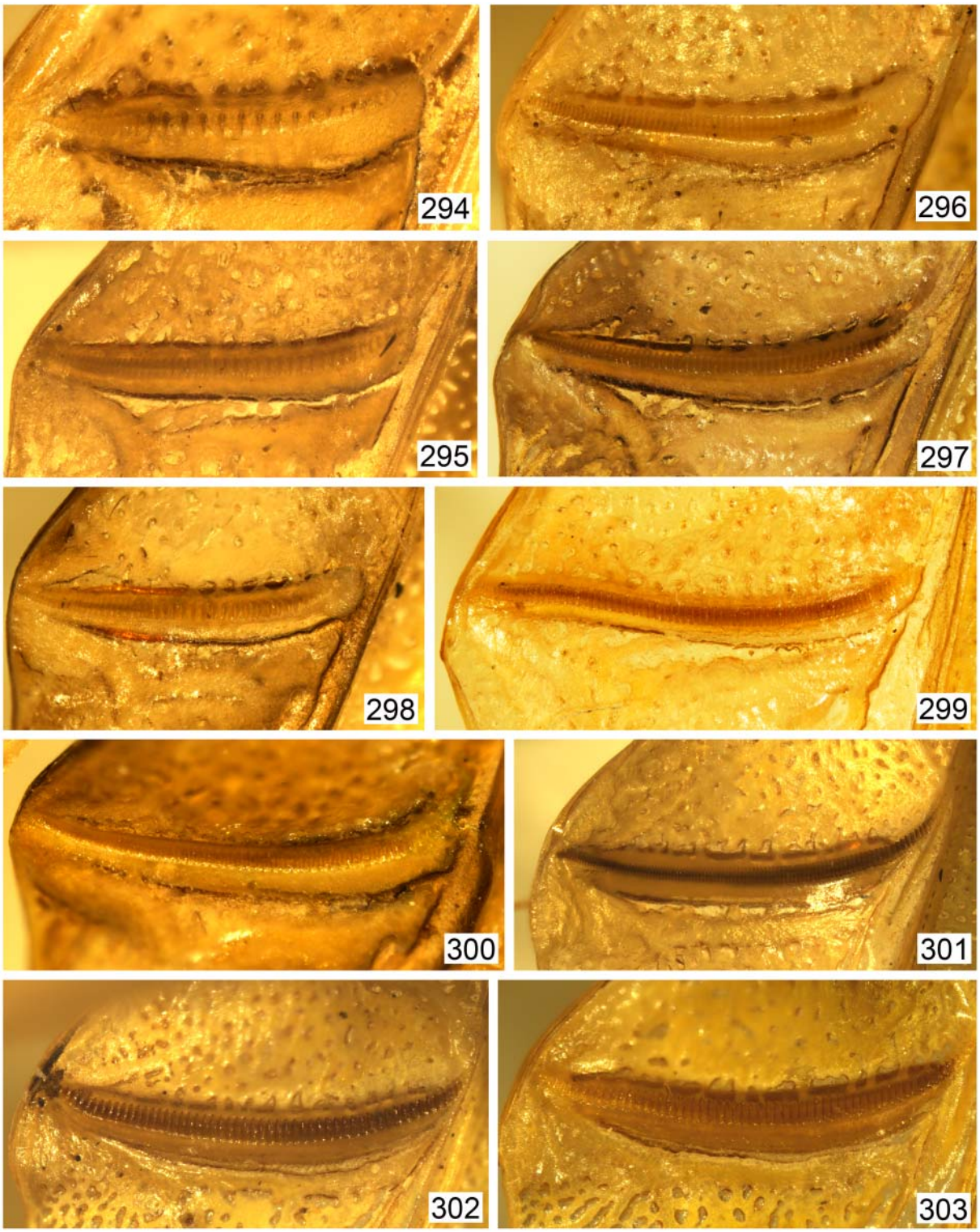
ETYMOLOGY. This species name consists of the Latin prefix "grandi-" (large) and the Latin word "placula" (plaque) due to the presence of very large plaques (placulae) on tegmina.

MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 2 males, 2 females, same data as for holotype (ZIN); 2 females, same data, but 1000–1200 m, 5–9.XII.2017, A. Gorochov, G. Irisov (ZIN); 1 male, same province, ~12 km N of Satipo Town, "Concesion de Conservacion de la Universitaria", 11.2031563º S, 74.61914062º W, ~600 m, primary forest, at light, 25–27.XI.2017, A. Gorochov, G. Irisov (ZIN); 1 male, same province, Rio Tampo Distr., 6 km N of Pichiguia Vill., "Reserva Comunal Ashaninka", 11.35824º S, 74.03205º W, ~500 m, 14–23.XI.2017, A. Gorochov, G. Irisov (ZIN); 1 male, 3 females, same country, Cusco Department (NW), environs of Miaria Vill. on Urubamba River, 11.33502º S, 72.99284º W, primary forest, at light, 8–11.X.2021, A. Gorochov (ZIN); 1 female, same department, La Convencion Prov. or Calca Prov., 50–55 km N




**Figs 286–293.** *Microcentrum*, male stridulatory apparatus: 286, 287 — *M.* (*Microcentrum*) *rhombifolium*; 288, 289 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** (holotype); 290, 291 — *M.* (*Rotundovapex*) *totonacum* (neotype); 292, 293 — *M. gracilissimum* **sp.n.** Left (286, 288, 290, 292) and right (287, 289, 291, 293) tegmina.

**Рис. 286–293.** *Microcentrum*, стридуляционный аппарат самца: 286, 287 — *M.* (*Microcentrum*) *rhombifolium*; 288, 289 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** (голотип); 290, 291 — *M.* (*Rotundovapex*) *totonacum* (неотип); 292, 293 — *M. gracilissimum* **sp.n.** Левое (286, 288, 290, 292) и правое (287, 289, 291, 293) надкрылья.

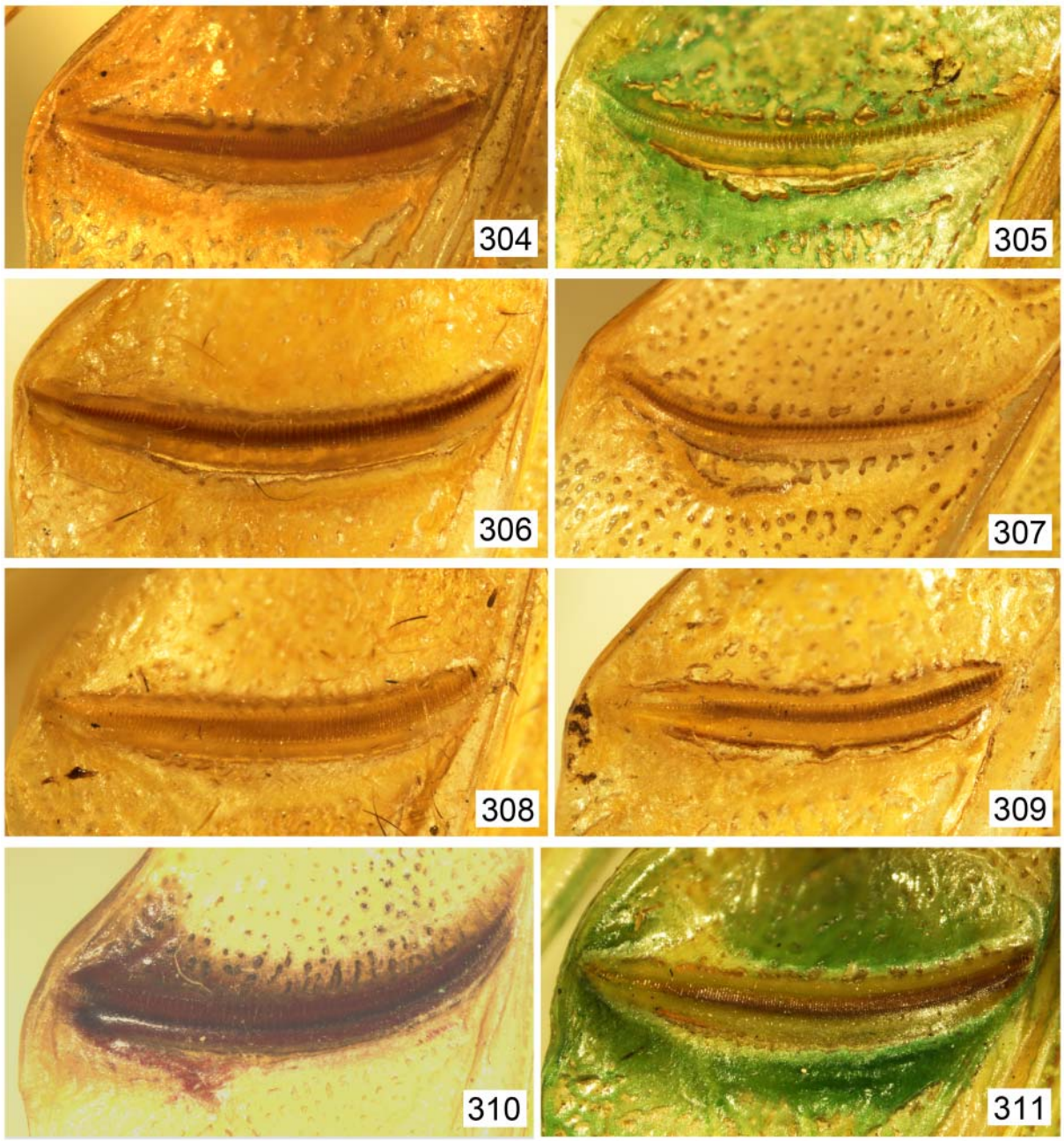



**Figs 294–303.** *Microcentrum*, stridulatory vein of male left tegmen from below: 294 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.** (holotype); 295 — *M.* (*C.*) *grandiplacula* **sp.n.** (holotype); 296, 297 — *M.* (*C.*) *miniplacula* **sp.n.** (296, holotype); 298 — *M.* (*C.*) *morona* **sp.n.**; 299 — *M.* (*C.*) *latistylus* **sp.n.**; 300 — *M.* (*C.*) *xavieri*; 301 — *M.* (*Microcentrum*) *simplex*; 302 — *M.* (*M.*) *jalisco* **sp.n.** (holotype); 303 — *M.* (*M.*) *sympatricum* **sp.n.**

**Рис. 294–303.** *Microcentrum*, стридуляционная жилка левого надкрылья самца снизу: 294 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.** (голотип); 295 — *M.* (*C.*) *grandiplacula* **sp.n.** (голотип); 296, 297 — *M.* (*C.*) *miniplacula* **sp.n.** (296, голотип); 298 — *M.* (*C.*) *morona* **sp.n.**; 299 — *M.* (*C.*) *latistylus* **sp.n.**; 300 — *M.* (*C.*) *xavieri*; 301 — *M.* (*Microcentrum*) *simplex*; 302 — *M.* (*M.*) *jalisco* **sp.n.** (голотип); 303 — *M.* (*M.*) *sympatricum* **sp.n.**

of Quillabamba Town, environs of Huillcapampa Station of SERNANP, 12.34083º S, 72.65147º W, 600–800 m, primary forest, at light, 16–22.X.2021, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance (Figs 214–216, 242, 264, 265, 316–319) more or less similar to that of *M.* (*C.*) *ph. tuxtlas* **subsp.n.**, but: body significantly smaller; each tegmen along proximal part of costal edge with light brown stripe (but this stripe interrupted by large yellow placulae), and dorsal field of left tegmen behind stridulatory apparatus with barely darkened (very light brownish) spot (Figs 242, 264); articulation at base of hind tibia light brown (not blackish; Fig. 143); each pronotal lateral lobe with anter-




**Figs 304–311.** *Microcentrum*, stridulatory vein of male left tegmen from below: 304 — *M.* (*Microcentrum*) *xerophilum* **sp.n.** (holotype); 305 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (holotype); 306 — *M.* (*M.*) *selva* **sp.n.** (holotype); 307 — *M.* (*M.*) *nitidum* **sp.n.** (holotype); 308 — *M.* (*M.*) *lacandonense* **sp.n.**; 309 — *M.* (*Rotundovapex*) *totonacum* (neotype); 310 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** (holotype); 311 — *M. gracilissimum* **sp.n.**

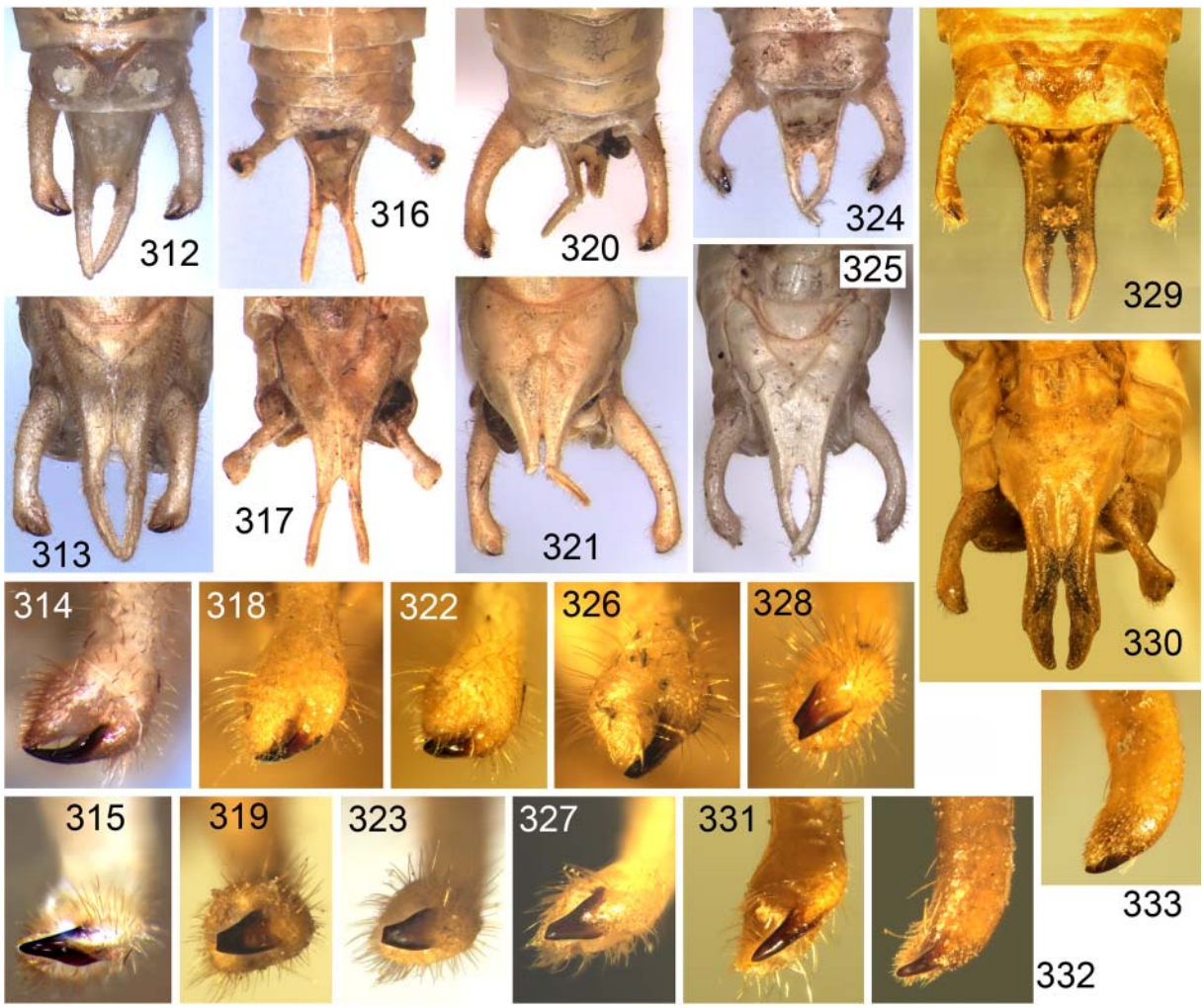
**Рис. 304–311.** *Microcentrum*, стридуляционная жилка левого надкрылья самца снизу: 304 — *M.* (*Microcentrum*) *xerophilum* **sp.n.** (голотип); 305 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (голотип); 306 — *M.* (*M.*) *selva* **sp.n.** (голотип); 307 — *M.* (*M.*) *nitidum* **sp.n.** (голотип); 308 — *M.* (*M.*) *lacandonense* **sp.n.**; 309 — *M.* (*Rotundovapex*) *totonacum* (неотип); 310 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** (голотип); 311 — *M. gracilissimum* **sp.n.**

oventral edge having small but distinct roundly angular projection (Fig. 216); tegmina narrower, with very large yellow placulae along proximal third of costal edge, with similar but smaller (moderately large) placulae along middle part of this edge, with stridulatory apparatus (Figs 242, 264, 265) distinguished from that of this subspecies by slightly less thickened both stridulatory vein and nearest vein in left tegmen as well as by almost invisible (lost in dense crossvenation) mirror of this tegmen (stridulatory vein of left tegmen with 47–48 ventral light teeth, but 7–8 most medial of them as well as 4–5 most lateral ones smaller; Fig. 295); abdomen with claw-shaped spine of cercus shorter and wider as well as having obliquely truncated apex (Figs 316, 318, 319), and with posteromedian notch of genital plate less deep (styles slightly more than twice as long as this notch; Fig. 317).

*Variations*. Placulae on tegmina insignificantly varied in size (from large to very large); one male with pronotal lateral lobes having distinct anteroventral projection on one lobe and almost without it on other lobe, and another male almost without these projections on both lobes; genital plate sometimes with posteromedian notch imsignificantly deeper.

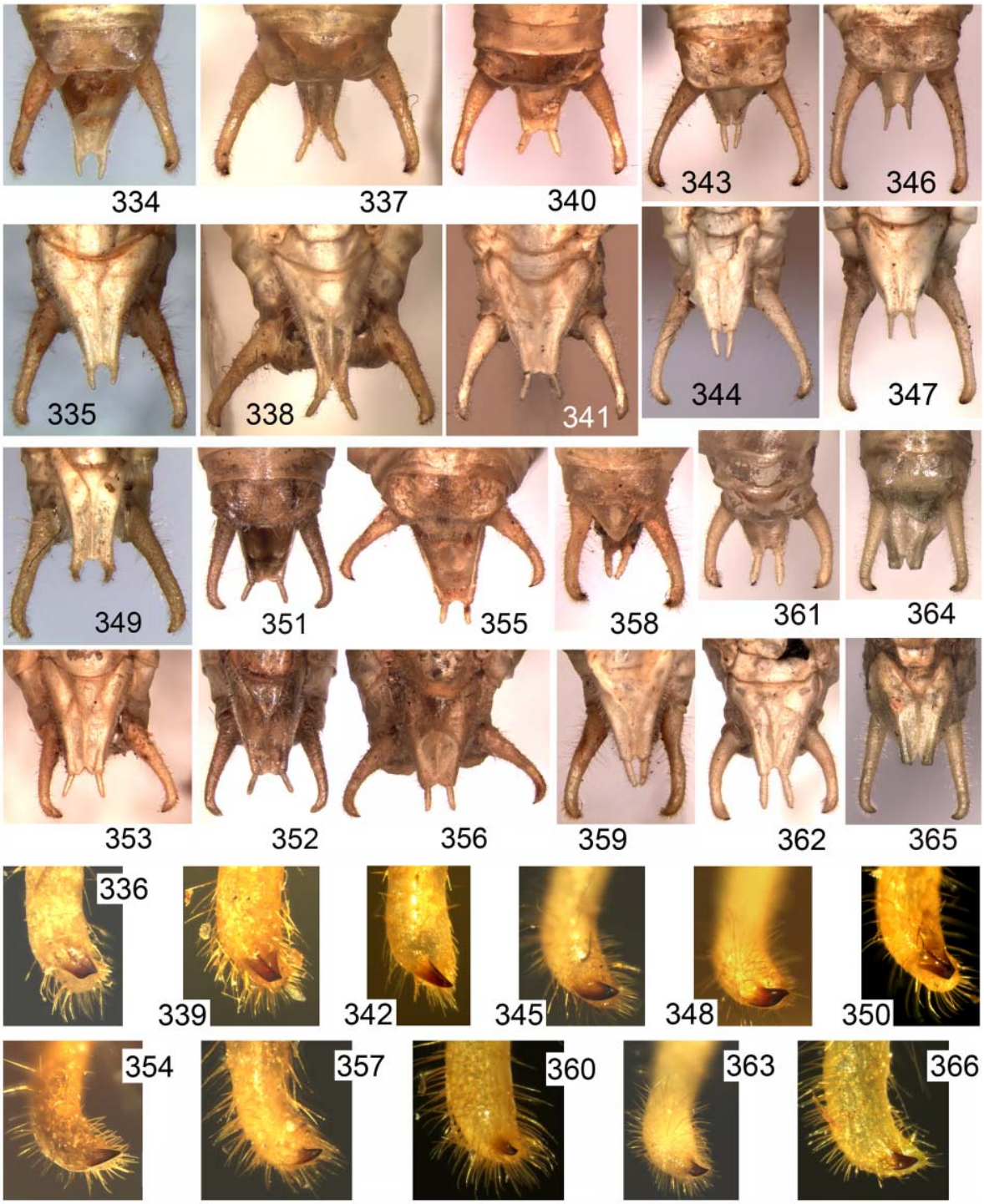
*Female*. Coloration and structure of body as in males, but light brown stripe on tegmina along their costal edges sometimes indistinct, and structure of dorsal tegminal fields and of abdominal apex (Figs 369, 370) almost as in female of *M.* (*C.*) *ph. tuxtlas* **subsp.n.**, but genital plate with somewhat wider distal part.

*Length* in mm. Body: male 17–22, female 20–28; body with wings: male 49–51, female 53–56; pronotum: male 4.8–5, female 5.2–5.7; tegmina: male 36–38, female 38–41; hind femora: male 22.5–24, female 24–27; ovipositor 5–5.3.




**Figs 312–333.** *Microcentrum* (*Carnavalia*) and *M.* (*Microcentrum*), male abdominal structures: 312–315 — *M.* (*C.*) *philammon tuxtlas* **subsp.n.** (holotype); 316– 319 — *M.* (*C.*) *grandiplacula* **sp.n.** (holotype); 320–323 — *M.* (*C.*) *morona* **sp.n.**; 324–327 — *M.* (*C.*) *miniplacula* **sp.n.** (holotype); 328 — *M.* (*C.*) *xavieri*; 329–331 — *M.* (*C.*) *latistylus* **sp.n.**; 332, 333 — *M.* (*M.*) *rhombifolium*. Abdominal apex from above (312, 316, 320, 324, 329) and from below (313, 317, 321, 325, 330); distal part of left cercus, dorsomedial (314, 318, 322, 326, 333), posterior (315, 319, 323) and posterodorsal (327, 328, 331, 332) views.

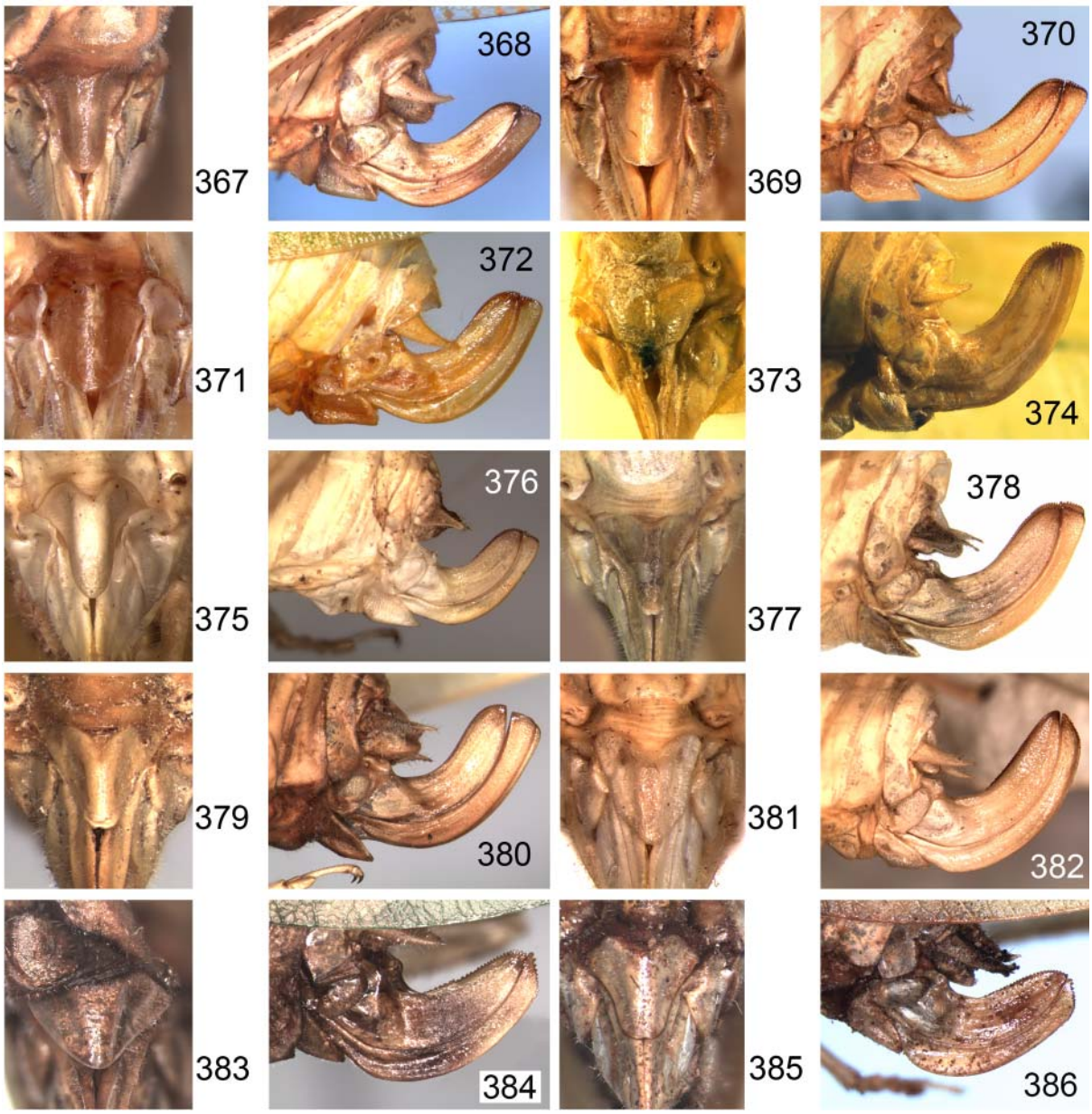
**Рис. 312–333.** *Microcentrum* (*Carnavalia*) и *M.* (*Microcentrum*), структуры брюшка самца: 312–315 — *M.* (*C.*) *philammon tuxtlas* **subsp.n.** (голотип); 316– 319 — *M.* (*C.*) *grandiplacula* **sp.n.** (голотип); 320–323 — *M.* (*C.*) *morona* **sp.n.**; 324–327 — *M.* (*C.*) *miniplacula* **sp.n.** (голотип); 328 — *M.* (*C.*) *xavieri*; 329–331 — *M.* (*C.*) *latistylus* **sp.n.**; 332, 333 — *M.* (*M.*) *rhombifolium*. Вершина брюшка сверху (312, 316, 320, 324, 329) и снизу (313, 317, 321, 325, 330); дистальная часть левого церка, дорсомедиальный (314, 318, 322, 326, 333), задний (315, 319, 323) и задневерхний (327, 328, 331, 332) виды.




**Figs 334–366.** *Microcentrum*, male abdominal structures: 334–336 — *M.* (*Microcentrum*) *jalisco* **sp.n.** (holotype); 337–339 — *M.* (*M.*) *sympatricum* **sp.n.**; 340–342 — *M.* (*M.*) *xerophilum* **sp.n.** (holotype); 343–345 — *M.* (*M.*) *selva* **sp.n.** (holotype); 346–348 — *M.* (*M.*) *lacandonense* **sp.n.**; 349, 350 — *M.* (*M.*) *simplex*; 351–354 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (351, 352, 354, holotype); 355–357 — *M.* (*M.*) *nitidum* **sp.n.** (holotype); 358–360 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** (holotype); 361–363 — *M.* (*Rotundovapex*) *totonacum* (neotype); 364–366 — *M. gracilissimum* **sp.n.** Abdominal apex from above (334, 337, 340, 343, 346, 351, 355, 358, 361, 364) and from below (335, 338, 341, 344, 347, 349, 352, 353, 356, 359, 362, 365); distal part of left cercus, posterodorsal view (336, 339, 342, 345, 348, 350, 354, 357, 360, 363, 366).

**Рис. 334–366.** *Microcentrum*, структуры брюшка самца: 334–336 — *M.* (*Microcentrum*) *jalisco* **sp.n.** (голотип); 337–339 — *M.* (*M.*) *sympatricum* **sp.n.**; 340–342 — *M.* (*M.*) *xerophilum* **sp.n.** (голотип); 343–345 — *M.* (*M.*) *selva* **sp.n.** (голотип); 346–348 — *M.* (*M.*) *lacandonense* **sp.n.**; 349, 350 — *M.* (*M.*) *simplex*; 351–354 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.** (351, 352, 354, голотип); 355–357 — *M.* (*M.*) *nitidum* **sp.n.** (голотип); 358–360 — *M.* (*Paradoxirostrum*) *ornatum* **sp.n.** (голотип); 361–363 — *M.* (*Rotundovapex*) *totonacum* (неотип); 364–366 — *M. gracilissimum* **sp.n.** Вершина брюшка сверху (334, 337, 340, 343, 346, 351, 355, 358, 361, 364) и снизу (335, 338, 341, 344, 347, 349, 352, 353, 356, 359, 362, 365); дистальная часть левого церка, задневерхний вид (336, 339, 342, 345, 348, 350, 354, 357, 360, 363, 366).

COMPARISON. The new species is similar to *M.* (*C.*) *xavieri* and *M.* (*C.*) *scudderi* in the structure of the male cercus having the claw-shaped spine apically truncated in the new species and with two small angular projections at the apex in the other above-mentioned taxa, but the new species is characterized by less spotted coloration and narrower (and not bilobed) distal part of the female genital plate (than in *M. xavieri*), as well as by much larger placulae along the costal tegminal edge and less truncated posterior part of the female genital plate (than in *M. scudderi*). From all other representatives of *Carnavalia*, the new species differs in smaller body, narrower tegmina, larger placulae along the costal tegminal edges and/or truncated claw-shaped spines on the male cerci.




**Figs 367–386.** *Microcentrum*, female abdomen: 367, 368 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.**; 369, 370 — *M.* (*C.*) *grandiplacula* **sp.n.**; 371, 372 — *M.* (*C.*) *miniplacula* **sp.n.**; 373, 374 — *M.* (*C.*) *latistylus* **sp.n.**; 375, 376 — *M.* (*Microcentrum*) *jalisco* **sp.n.**; 377, 378 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.**; 379, 380 — *M.* (*M.*) *nitidum* **sp.n.**; 381, 382 — *M.* (*Rotundovapex*) *totonacum*; 383, 384 — *M.* (*R.*) *tamaulipas* **sp.n.**; 385, 386 — *M.* (*R.*) *foliolum* **sp.n.** Genital plate from below (367, 369, 371, 373, 375, 377, 379, 381, 383, 385); this plate and ovipositor from side (368, 370, 372, 374, 376, 378, 380, 382, 384, 386).

**Рис. 367–386.** *Microcentrum*, брюшко самки: 367, 368 — *M.* (*Carnavalia*) *philammon tuxtlas* **subsp.n.**; 369, 370 — *M.* (*C.*) *grandiplacula* **sp.n.**; 371, 372 — *M.* (*C.*) *miniplacula* **sp.n.**; 373, 374 — *M.* (*C.*) *latistylus* **sp.n.**; 375, 376 — *M.* (*Microcentrum*) *jalisco* **sp.n.**; 377, 378 — *M.* (*M.*) *nigrolineatum boreale* **subsp.n.**; 379, 380 — *M.* (*M.*) *nitidum* **sp.n.**; 381, 382 — *M.* (*Rotundovapex*) *totonacum*; 383, 384 — *M.* (*R.*) *tamaulipas* **sp.n.**; 385, 386 — *M.* (*R.*) *foliolum* **sp.n.** Генитальная пластинка снизу (367, 369, 371, 373, 375, 377, 379, 381, 383, 385); эта пластинка и яйцеклад сбоку (368, 370, 372, 374, 376, 378, 380, 382, 384, 386).

*Microcentrum* (*Carnavalia*) *morona* Gorochov, **sp.n.**
Figs 144, 217–219, 243, 266, 267, 298, 320–323.

ETYMOLOGY. The new species is named after the river located very near its type locality.

MATERIAL. *Holotype* male, **Ecuador**: Morona Santiago Prov., bank of Morona River near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15.I.2010, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance very similar to that of *M*. (*C*.) *grandiplacula* **sp.n.** but with following characteristic features: rostrum of head slightly narrower; antennal flagellum light brown to greyish brown with short yellowish proximal part (Fig. 217); pronotum with light brown line along all edges of hind lobe (Fig. 218) and without more or less angular anteroventral projection on each lateral lobe (Fig. 219); fore tibia with light brown longitudinal stripe on all tympanic membranes; tegmina with slightly darkened stripe along proximal part of each costal edge and with light brown to greyish brown small marks in basal areas of dorsal fields (at bases of these areas, and along anal edge before stridulatory vein in left tegmen); tegminal lateral field with anterior branch of RA ending clearly before apex of tegmen, with MA and branches of RS distinctly shorter (less longitudinal), and with wider area between RS branches (Fig. 243); tegminal stridulatory apparatus practically indistinguished from that of this species (Figs 266, 267) but with stridulatory vein of left tegmen having 44 light ventral teeth (10–11 most medial of them slightly smaller than other teeth, except for 6–7 most lateral teeth which distinctly smaller; Fig. 298); abdomen with cerci practically indistinguishable from those of *M*. (*C*.) *grandiplacula* **sp.n.** (Figs 320, 322, 323), but its genital plate with somewhat deeper and narrower posteromedian notch (styles approximately 1.5 times as long as this notch; Fig. 321).

*Female* unknown.

*Length* in mm. Body 20; body with wings 46; pronotum 4.5; tegmina 34; hind femora 23.

COMPARISON. The new species differs from *M*. (*C*.) *grandiplacula* **sp.n.** in the tegmina with shorter MA and branches of RS as well as a wider area between the latter branches, in


**Figs 387–404.** *Microcentrum*, head and pronotum: 387 — *M*. (*Carnavalia*?) *lanceolatum*; 388–391 — *M*. (*Paradoxirostrum*) *ornatum* **sp.n.** (389–391, holotype); 392–395 — *M*. (*Rotundovapex*) *totonacum*, male neotype (392–394) and female (395); 396–398 — *M*. (*R*.) *foliolum* **sp.n.**; 399–401 — *M*. (*R*.) *tamaulipas* **sp.n.**; 402–404 — *M*. *gracilissimum* **sp.n.** Scheme of rostral region of head in profile (387, 388); head in front (389, 392, 396, 399, 402); head with pronotum from above (390, 393, 395, 397, 400, 403) and from side (391, 394, 398, 401, 404).

**Рис. 387–404.** *Microcentrum*, голова и переднеспинка: 387 — *M*. (*Carnavalia*?) *lanceolatum*; 388–391 — *M*. (*Paradoxirostrum*) *ornatum* **sp.n.** (389–391, голотип); 392–395 — *M*. (*Rotundovapex*) *totonacum*, самец-неотип (392–394) и самка (395); 396–398 — *M*. (*R*.) *foliolum* **sp.n.**; 399–401 — *M*. (*R*.) *tamaulipas* **sp.n.**; 402–404 — *M*. *gracilissimum* **sp.n.** Схема ростральной области головы в профиль (387, 388); голова спереди (389, 392, 396, 399, 402); голова с переднеспинкой сверху (390, 393, 395, 397, 400, 403) и сбоку (391, 394, 398, 401, 404).

the posterior branch of tegminal RA ending before the tegminal apex (*vs* at this apex), in the shorter stridulatory vein of the left male tegmen having less numerous ventral teeth, and in the clearly deeper posteromedian notch in the male genital plate. From *M.* (*C.*) *xavieri* with similar shape of the tegmina, the new species differs in less spotted coloration, a truncated (not slightly bifurcated) apex of the claw-shaped cercal spinule and different structure of the left strudulatory teeth (compare Figs 298 and 300), and from other *Carnavalia* species, in narrower tegmina and/or larger yellowish placulae along the costal tegminal edge.

### *Microcentrum* (*Carnavalia*) *xavieri* Sovano et Cadena-Castañeda, 2015
Figs 300, 328.

MATERIAL. **French Guiana**: 1 male, "Mt de Kaw", 2 km SE of "Camp Caimans", 4º34´ N, 52º12´ W, 300 m, forest, al light, 8.VII.1995, V. Gusarov (ZIN).

NOTE. This species was described from Brazil and Colombia (Sovano, Cadena-Castañeda, 2015) but without indicating the structure of the apical part of the male cercal claw-shaped spine, although this character is important for species identification. Here this species is firstly recorded for French Guiana, and its male stridulatory vein and the apical part of the male cercal spine are briefly described and illustrated: this vein has a long row from about 50 ventral teeth which gradually increase from medial part of this vein to almost lateral one (Fig. 300); the aforementioned part of the male cercal spine is more or less truncate but with two small angular projections (approximately as in *M. scudderi*; Fig. 328).

### *Microcentrum* (*Carnavalia*) *miniplacula* Gorochov, **sp.n.**
Figs 145, 220–222, 244, 268, 269, 296, 297, 324–327, 371, 372.

ETYMOLOGY. This species name consists of the Latin prefix "mini-" (small) and the Latin word "placula" (plaque) due to the presence of small plaques (placulae) on tegmina.

MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., Rio Tampo Distr., 6 km N of Pichiguia Vill., "Reserva Comunal Ashaninka", 11.35824º S, 74.03205º W, ~500 m, primary forest, at light, 14–23.XI.2017, A. Gorochov, G. Irisov (ZIN). *Paratypes*: 8 males, 2 females, same data as for holotype (ZIN); 1 male, same data, but 11.358244°S, 74.0320473°W, 14–19.XII.2018, A. Gorochov (ZIN); 2 males, same province, garden-forest in Satipo Town, ~600 m, at light, 15.X–6.XI.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, same province, ~12 km N of Satipo Town, "Concesion de Conservacion de la Universitaria", 11.2031563º S, 74.61914062º W, ~600 m, primary forest, at light, 25–27.XI.2017, A. Gorochov, G. Irisov (ZIN); 4 males, 1 female, same country, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Ucayali River, environs of Sapani Vill., ~300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 1 male, same country, Cusco Department (NW), environs of Miaria Vill. on Urubamba River, 11.33502º S, 72.99284º W, primary forest, at light, 8–11.X.2021, A. Gorochov (ZIN); 1 male, same country, bank of Morona River not far from its mouth and near Puerto America Town, ~200 m, primary forest, at light, 20–23.I.2010, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance very similar to that of *M.* (*C.*) *grandiplacula* **sp.n.** (Figs 220, 221) but with following differences: coloration without light brown both stripe on each tegmen along its costal edge and stripe on each tympanum, as well as with blackish (not light brown) articulation at base of hind tibia (Fig. 145); each pronotal lateral lobe without distinct roundly angular projection on anteroventral edge (Fig. 222); tegmina slightly wider (almost as in *M. philammom tuxtlas* **subsp.n.**), with clearly smaller yellow placulae along costal edge (Fig. 244), with stridulatory apparatus distinguished from that of *M.* (*C.*) *grandiplacula* **sp.n.** almost only by left stridulatory vein ventrally having about 55 larger light teeth (these teeth gradually increasing in medial portion and slightly decreasing in short lateral one) as well as 5–6 also very light but much smaller and more lateral additional teeth (Figs 268, 269, 296); abdomen with claw-shaped cercal spine slightly longer and having somewhat narrower but obliquely truncated apex (Figs 324, 326, 327), and with styles of genital plate approximately twice as long as its posteromedian notch (Fig. 325).

*Variations*. Darkened spot on dorsal field of left tegmen sometimes indistinct or slightly darker; antennal flagellum often with light brown to greyish brown middle and distal parts; few most lateral teeth of left stridulatory vein sometimes darker (Fig. 297); width of truncated part of claw-shaped cercal spine slightly varied (often almost as in *M. grandiplacula* **sp.n.**); styles sometimes slightly less than twice as long as posteromedian notch of genital plate.

*Female*. Coloration and external structure of body as in male, but venation of dorsal tegminal fields and structure of abdominal apex very similar to those in female of *M.* (*C.*) *ph. tuxtlas* **subsp.n.** and of *M.* (*C.*) *grandiplacula* **sp.n.**, but genital plate almost intermediate between these species in shape (Figs 371, 372).

*Length* in mm. Body: male 21–24, female 31–33; body with wings: male 51–55, female 57–63; pronotum: male 6–6.2; female 6.4–7; tegmina: male 38–40, female 42–46; hind femora: male 21–23, female 25–29; ovipositor 5.7–6.1.

COMPARISON. The new species differs from the sympatric species *M.* (*C.*) *grandiplacula* **sp.n.** in more rounded edges of the pronotal lateral lobes, somewhat wider tegmina having smaller placulae along the costal edge, and blackish (not light brown) articulation at the base of the hind tibia. From *M.* (*C.*) *scudderi*, the new species is distinguished by obliquely truncated (not slightly bifurcated) apices of the claw-shaped cercal spines, a clearly shorter posteromedian notch of the male genital plate (the styles are almost as long as this notch in *M. scudderi* and 1.5–2 times as long as this notch in *M. miniplacula* **sp.n.**), as well as the distal part of the female genital plate less high and more or less angular (not almost truncated) in profile. From *M.* (*C.*) *marginatum*, the new species is distinguished by the left stridulatory vein longer (length of this vein in *M. marginatum* is almost as great as width of the left dorsal field near the mirror middle, but in the new species, this vein is distinctly longer) as well as having its lateral part thicker and more curved, and by the distal part of CuA2 in the left dorsal tegminal field clearly less obliquely longitudinal (more obliquely transverse). From all other representatives of *Carnavalia*, the new species differs in smaller body, narrower or wider tegmina with smaller placulae along the costal edges, narrower dorsal fields and longer or narrower mirrors in the male tegmina, different structure of teeth on the male left stridulatory vein, shorter and apically truncated claw-shaped spines on the male cerci, darker articulation at the base of hind tibia, or less variegated general coloration.

*Microcentrum* (*Carnavalia*) *latistylus* Gorochov, **sp.n.**
Figs 223–225, 245, 270, 271, 299, 329–331, 373, 374.

ETYMOLOGY. This species name consists of the Latin prefix "lati-" (wide) and morphological term "stylus" (style) due to the male genital plate having wide styles.

MATERIAL. *Holotype* male, **Peru**: Junin Department, Satipo Prov., Rio Tampo Distr., ~6 km N of Pichiguia Vill., "Reserva Comunal Ashaninka", 11.35824º S, 74.03205º W, ~500 m, primary forest, at light, 14–23.XI.2017, A. Gorochov, G. Irisov (ZIN). *Paratype* female, same province, ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN).

DESCRIPTION. *Male* (holotype). General appearance similar to that of *M.* (*C.*) *miniplacula* **sp.n.** but with following differences: head with slightly wider rostrum (Fig. 223); pronotum with very short and widely rounded anteromedian projection of disc (*vs* this projection practically absent), but its lateral lobes almost as in this species (Figs 224, 225); tegmina hardly wider in proximal half, with placulae along costal edges somewhat smaller (these placulae poorly distinct and looking as small thickenings of apices of Sc branches; Fig. 245), and with stridulatory apparatus as in Figs 270, 271, 299 (left stridulatory vein with slightly S-shaped row from 73–75 ventral teeth: majority of them moderately large and light brown, but 5–6 medial and 3–4 lateral teeth smaller and lighter); cercus with claw-like spine narrow and rather long as well as acute, and with soft apical lobule moderately large (i.e., cercal apex more or less similar to that of *M. philammon tuxtlas* **subsp.n.**; Figs 329, 331); genital plate triangularly elongate, with slightly concave lateral edges and almost semitubular distal portion; its styles horizontally flattened and proximally widened as well as having oblique and partly membranous articulations with above-mentioned portion (posteromedian notch of this portion moderately short, narrowly angular and partly formed by aforementioned membranous parts; Fig. 330).

*Female*. Coloration and structure of body very similar to those of male, but: body slightly larger; dorsal tegminal fields as in females of all other studied species of this genus; abdomen similar to that of females of *Carnavalia* species, described here, except for genital plate which clearly wider (shorter), gradually narrowing to transversely triangular distal portion with rather small and rounded posteromedian projection as well as with a pair of distinct lateral (subapical) convexities, and without lateral compression (i.e., without large ventromedian keel-like fold) but with very low and thin longitudinal ventromedian keel (Figs 373, 374).

*Length* in mm. Body: male 22, female 26; body with wings: male 54, female 60; pronotum: male 6.1, female 6.7; tegmina: male 42, female 46; hind femora: male 23, female 26; ovipositor 6.3.

COMPARISON. The new species is distinguished from *M.* (*C.*) *miniplacula* **sp.n.** by smaller and poorly distinct placulae along the tegminal costal edges, longer and narrower as well as acute claw-like cercal spines, larger soft apical cercal lobules, much wider and flattened styles of the male genital plate, and a characteristic shape of the female genital plate; from *M.* (*C.*?) *lanceolatum*, by less wide tegmina; from *M.* (*C.*) *angustatum*, by significantly wider styles of the male genital plate; from *M.* (*C.*) *marginatum*, by the same character of the male genital plate and a longer right tegminal mirror; from *M.* (*C.*) *philammon*, by thinner left stridulatory vein and much wider styles of the male genital plate; from *M.* (*C.*) *bicentenarium*, by smaller and less distinct placulae along the tegminal costal edge as well as by the same character of the male genital plate; from *M.* (*C.*) *syntechnoides*, by a thinner left stridulatory vein and a longer right tegminal mirror; from *M.* (*C.*) *stridulans* **nom.n.**, by smaller (shorter) left stridulatory vein; and from all other congeners of this subgenus, by clearly wider distal halves of the tegmina and much smaller placulae along the costal tegminal edges as well as some features of the stridulatory apparatus and of the male abdominal apex.

*Microcentrum* (*Microcentrum*) *stridulomaculosum*
Cadena-Castañeda, 2014
Figs 146, 147.

MATERIAL. **Mexico**: 1 male, 1 female, Chiapas State, environs of Tuxtla Gutierrez City near El Ocote Reserve, 600–1000 m, primary/secondary forest, at light, 19–24.V.2006, A. Gorochov, M. Berezin (ZIN).

NOTE. This species with its remarkably spotted coloration of the male tegmina and of the fore legs in all sexes was previously known only from Guatemala [Cadena-Castañeda, 2014]. Here this species is firstly recorded from Mexico.

*Microcentrum* (*Microcentrum*) *jalisco* Gorochov**, sp.n.**
Figs 148, 149, 226–228, 247, 274, 275, 302, 334–336, 375, 376.

ETYMOLOGY. This species is named after the Mexican state where it was collected.

MATERIAL. *Holotype* male, **Mexico**: Jalisco State, environs of Chamela Vill. in 3–4 km from Pacific Ocean (biostation of Mexico University), 19º33´ N, 105º5´ W, dry forest on hills, at light, 23–28.XI.2006, A. Gorochov, A. Ovtshinnikov (ZIN). *Paratypes*: 5 males, 4 females, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance rather similar to *M.* (*M.*) *stridulomaculosum* in medium-sized body and characteristic pronotum having disc with carina-like lateral edges (i.e., pronotum with almost rectangular dorsolateral parts in transverse section; Figs 227, 228). Coloration uniformly light yellowish green with light yellowish brown eyes, yellow ocelli (Figs 226–228, 247, 274), blackish lateral stripe on fore tibia along dorsal edge of outer tympanum, rose lateral stripe along ventral edge of this tympanum, brown small marks near proximal and distal edges of inner tympanum, 2 longitudinal (blackish and brown) narrow stripes on each (outer and inner) tympanic membranes (Figs 148, 149), light yellowish brown articulation at base of hind tibia, transparent some membranes in stridulatoty apparatus of right tegmen (Fig. 275) and majority of membranes in hind wings, and brown to dark brown claw-shaped spine of each cercus (Fig. 336). Head with rostrum moderately wide (distance between antennal cavities approximately 1.5 times as great as scape width) and with upper rostral tubercle dorsally almost flat (without distinct dorsal concavity) and barely curved in profile (Figs 226–228); pronotum with anterior edge of disc somewhat concave but having short and rounded median projection, with posterior edge of disc widely rounded, and with lateral lobes having more or less rounded anteroventral edges (Figs 227, 228). Tegmina moderately narrow (slightly shortened but far protruding beyond apices of hind femora), with two distinct RA branches and with other venation as in Fig. 247; stridulatory apparatus rather wide, with stridulatory vein of left tegmen almost 3.3 mm in length as well as having about 54 dark teeth (3 medial and 3 sublateral of them slightly smaller) and 2 light additional teeth which most lateral and distinctly smaller (Figs 274, 275, 302).

Abdomen with apical part similar to that of *Carnavalia* males, but: cerci with distal portions distinctly thinner (almost as thin as their subdistal parts) and almost cylindrical, but apical part of each cercus slightly curved medially and with 2 short lobules (one lobule small but not thin, in shape of claw-like spine directed medially as well as having obliquely and sinuately truncated apex with very small acute projection on one edge; another lobule almost round and slightly projecting behind this spine) (Figs 334, 336); genital plate insignificantly longer than cerci, gradually narrowing to elongated and moderately narrow distal part, and with narrow but not deep posteromedian notch which 2–2.5 times as short as styles and having rounded proximal part (Fig. 335).

*Variations*. Eyes sometimes light brown to brown; fore tibia often with rose stripe along ventral edge of inner tympanum but sometimes without rose stripes along ventral edge of both inner and outer tympana; genital plate with posteromedian notch having slightly narrower proximal part (but this notch as short as in holotype, and its proximal part also rounded).

*Female*. General appearance almost as in males, but tegmina slightly wider and without normal stridulatory apparatus, and abdomen more or less typical of female of this genus: non-genital parts almost as in previously described representatives of *Carnavalia*, genital plate with rather widely rounded median (longitudinal) keel and roundly angular apex (this plate gradually narrowing to acute-angular apex in profile; Figs 375, 376), and ovipositor as in Fig. 376.

*Length* in mm. Body: male 19–22, female 19–27; body with wings: male 45–48, female 47–50; pronotum: male 5.5–5.8, female 5.7–6; tegmina: male 34–37, female 36–38; hind femora: male 20–21.5, female 21–23; ovipositor 4–4.2.

COMPARISON. The new species is most similar to *M.* (*M.*) *simplex* but distinguished by the fore tibia with a single blackish stripe on its dorsolateral part almost along the outer tympanum (other stripes absent) and lighter tympanic membranes (compare Figs 148, 149 and 150, 151), by hardly shorter and wider tegmina having the stridulatory vein on the male left tegmen with distinctly less dense ventral teeth (see Figs 247, 302 and 249, 301), by the male cercus with an acute very small projection on the claw-shaped spine apex (*vs* this spine is more transversely truncated apically; see Figs 336 and 350), and by the male genital plate lacking any small and gently sloping projection at the bottom of its posteromedian notch (see Figs 335 and 349). From *M.* (*M.*) *suave*, also similar to the new species, the latter one differs in slightly wider tegmina and the presence of darkened marks on the fore tibia. From all other congeners of this subgenus, the new species differs in the spotted fore tibiae, rather narrow and uniformly colored tegmina, as well as characteristic structure of the following bodyparts: head, tegminal venation, claw-shaped cercal spines and male genital plate.

### *Microcentrum* (*Microcentrum*) *sympatricum* Gorochov, **sp.n.**

Figs 152, 153, 248, 276, 277, 303, 337–339

ETYMOLOGY. The species name is the Latinized biological term (of the Greek origin) “sympatricum” (sympatric) due to the same type locality as for *M.* (*M.*) *jalisco* **sp.n.**

MATERIAL. *Holotype* male, **Mexico**: Jalisco State, environs of Chamela Vill. in 3–4 km from Pacific Ocean (biostation of Mexico University), 19º33´ N, 105º5´ W, dry forest on hills, at light, 23–28.XI.2006, A. Gorochov, A. Ovtshinnikov (ZIN).

DESCRIPTION. *Male* (holotype). Size, coloration and structure of body similar to those of *M.* (*M.*) *jalisco* **sp.n.** (including tympanal region; Figs 152, 153), but with following differences: tegmina somewhat longer (narrower), with area between RS base and MA slightly narrower, anterior branch of RS more S-shaped, and stridulatory apparatus having barely longer mirrors in both tegmina and slightly sinuate (not weakly arcuate) medial third of ventral row of stridulatory teeth in left tegmen (this row consisting of 57 teeth, but 6–7 medial of them light and rather small, 3–4 lateral of them also light but even smaller, and all others dark and rather large) (compare Figs 247, 274, 275, 302 and 248, 276, 277, 303); claw-shaped spine of cercus with slightly narrower and obliquely truncated apical part (see Figs 336 and 339); genital plate with distinctly deeper and angular (not rounded) posteromedian notch having deepest part very narrow, as well as with styles almost as long as this notch (*vs* styles of genital plate 2–2.5 times as long as above-mentioned notch; see Figs 334, 335 and 337, 338).

*Female* unknown.

*Length* in mm. Body 22; body with wings 46; pronotum 6; tegmina 36; hind femora 20.

COMPARISON. From most similar species, *M.* (*M.*) *jalisco* **sp.n.** and *M.* (*M.*) *simplex*, the new species differs in the following features: from the first species, in the above-mentioned tegminal and cercal characters; from the second one, in a more darkened tympanal part of the fore tibia, less numerous stridulatory teeth of the left tegmen, as well as different shape of the cercal apical claw-like spinule and of the distal part of the genital plate (compare Figs 150, 151, 301, 349, 350 and 152, 153, 303, 338, 339).

### *Microcentrum* (*Microcentrum*) *xerophilum* Gorochov, **sp.n.**

Figs 154, 155, 229–231, 254, 272, 273, 304, 340–342.

ETYMOLOGY. This species name is the Latinized Greek word “xerophilum” (xerophilic, dry-loving) due to its type locality with dry forests.

MATERIAL. *Holotype* male, **Ecuador**: western part not far from sea coast, environs of Puerto Lopes Town near Agua Blanca Vill., dry forest on hills, on leaf of bush at night, 24–26.X.2005, A. Gorochov, A. Ovtshinnikov (ZIN). *Paratype* male, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance more or less similar to that of *M.* (*M.*) *jalisco* **sp.n.** and *M.* (*M.*) *sympatricum* **sp.n.**, but: body size somewhat smaller; coloration distinguished from that of these species by presence of numerous very small light brownish spots on distal half of antennal flagellum and by one darkened (greyish brown) stripe on dorsolateral part of fore tibia along dorsal edge of outer tympanum (almost as in *M. simplex*), but both tympanic membranes (outer and inner) with two longitudinal darkened stripes (dark brown dorsal stripe, and slightly lighter and thinner ventral one) and with greyish brown line along ventral edge of each tympanic membrane (Figs 154, 155); head with somewhat wider rostrum (distance between antennal cavities approximately twice as great as scape width), and upper and lower rostral tubercles practically flat (without distinct grooves or concavities), but lower one with sinuate (concave in median part) apex (Figs 229–231); pronotum with more projected and more angular median denticle on anterior edge of disc (Fig. 230); tegmina somewhat shorter, with anal edge clearly convex (but not almost straight or barely concave) in region of proximal parts of RS branches (Fig. 254), with stridulatory apparatus having both mirrors and left stridulatory vein barely shorter (this vein almost 3.2 mm in length; Figs 272, 273), and with ventral teeth of this vein more numerous (about 110 light teeth gradually increasing in medial half of vein and gradually

decreasing in its short lateral part; Fig. 304); abdomen with last tergite slightly convex (Fig. 340), with cercus having claw-shaped spine thinner and gradually narrowing to acute apex (Fig. 342), and with genital plate barely notched at apex and having styles much longer than this notch (Fig. 341).

*Variation*. Second male with fore tibia having lighter (almost light greyish brown) stripe along dorsal edge of outer tympanum, with very small posteromedian notch on pronotal disc and practically without notch at apex of genital plate.

*Female* unknown.

*Length* in mm. Body 14–18, body with wings 38–40; pronotum 5–5.2; tegmina 31–32; hind femora 14–15.5.

COMPARISON. The new species is distinguished from the most similar taxa *M.* (*M.*) *simplex*, *M.* (*M.*) *jalisco* **sp.n.** and *M.* (*M.*) *sympatricum* **sp.n.** by a wider head rostrum, by shorter male tegmina with shorter mirrors and distinctly more numerous teeth on the left stridulatory vein, as well as by the male abdominal apex with the cercal claw-shaped spine narrower and more gradually narrowing to the acute apex, and with the male genital plate almost lacking a posteromedian notch. From *M.* (*R.*) *stylatum* and *M.* (*R.*?) *fruterorum* which are somewhat similar to *M.* (*M.*) *xerophilum* **sp.n.**, the new species differs in the absence of darkened punctuation on the pronotal disc and in the presence of darkenings on the fore tibia, respectively. From all other congeners of this subgenus, the new species differs in the same features as the above-mentioned congeners.

### *Microcentrum* (*Microcentrum*) *selva* Gorochov, **sp.n.**
Figs 156, 157, 232–234, 250, 278, 279, 306, 343–345.

ETYMOLOGY. The species is named after its type locality, "Selva Lacandona".

MATERIAL. *Holotype* male, **Mexico**: Chiapas State, northeastern part, Ocosingo Distr. near Guatemala, "Selva Lacandona" between Montes Azules Biosphere Reserve and Bonampak Natural Monument, environs of Lacanja-Chansayab Vill., primary forest, at light, 20–27.V.2007, M. Berezin, E. Tkatsheva (ZIN). *Paratype* male, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance more or less similar to that of *M.* (*M.*) *xerophilum* **sp.n.** but with following characteristic features: body distinctly larger; coloration yellowish with greenish tinge, light brown eyes as well as middle and distal parts of antennal flagellum (Figs 232–234), darkened marks on fore tibia (one black dorsolateral stripe along dorsal edge of outer tympanum which wider than in this species and pressed to tympanic membrane, a pair of black very narrow stripes along ventral edge of both tympanic membranes fused with previous black dorsal stripe before and after tympanic membrane on outer side as well as running along distal part of this membrane on inner side, and almost completely black both tympanic membranes; Figs 156, 157) and dark brown claw-like spine of cercus; head with space between antennal cavities almost 2 times as wide as scape, with transversely straight and very narrow slit between upper and lower rostral tubercles, and with weak longitudinal groove on dorsum of upper rostral tubercle (Figs 232, 233); pronotum with disc as in holotype of *M.* (*M.*) *xerophilum* **sp.n.** but with lateral lobes somewhat longer (Figs 233, 234); tegmina longer than in this species but rather similarly widened (Fig. 250), with somewhat longer both each mirror and left stridulatory vein (Figs 278, 279), and with this stridulatory vein having 93–94 ventral and mostly darkened teeth (28–30 medial of them gradually increasing to middle part of this vein, others rather large but with 6–7 sublateral of them gradually enlarging to 3-4 very small and light most lateral teeth; Fig. 306); abdomen with similar last tergite, but cerci slightly longer, their distal parts more curved medially, claw-shaped cercal spines somewhat wider and more hooked, genital plate with distinct but very narrow posteromedian notch, and styles of this plate approximately trice as long as this notch (Figs 343–345).

*Variation*. Second male distinguished from holotype by darker (brown) eyes and slightly shorter posteromedian notch of genital plate.

*Female* unknown.

*Length* in mm. Body 21–24; body with wings 49–51; pronotum 6.6–6.8; tegmina 37.5–39; hind femora 18–19.

COMPARISON. The new species differs from *M.* (*M.*) *xerophilum* **sp.n.** in larger body, somewhat different structure of the left stridulatory vein (this vein is about 4 mm in length and has 93–94 ventral teeth, but in *M. xerophilum* **sp.n.**, it about 3.2 mm in length and with 110 such teeth; compare Figs 272, 304 and 278, 306), longer male cerci with more curved distal parts, wider and more hooked claw-shaped cercal spines, and more distinct posteromedian notch of the male genital plate. From *M.* (*R.*) *stylatum* and *M.* (*R.*?) *fruterorum*, also somewhat similar to *M.* (*M.*) *selva* **sp.n.**, the new species is distinguished by the following features: the tegminal area between R and MA near RS base and near the place of RS bifurcation is almost as wide as the intermedian area (but in *M. stylatum*, the first area is much narrower than the intermedian one); the pronotum lacks darkened punctuation on the disc, and the fore tibia has darkened marks (but in *M. frutetorum*, the pronotal disc has such punctuation, and the fore tibia lacks distinct darkenings). From all other species of *Microcentrum* s. str., the new species differs in more or less uniform coloration with darkened marks on the fore tibiae, in characteristic shape of the tegmina (compare Figs 246–249, 252 with 250) as well as in the above-mentioned features of the male stridulatory apparatus and of the male abdominal apex.

### *Microcentrum* (*Microcentrum*) *lacandonense* Gorochov, **sp.n.**
Figs 158, 159, 251, 280, 281, 308, 346–348.

ETYMOLOGY. The species is named also after its type locality, "Selva Lacandona".

MATERIAL. *Holotype* male, **Mexico**: Chiapas State, northeastern part, Ocosingo Distr. near Guatemala, "Selva Lacandona" between Montes Azules Biosphere Reserve and Bonampak Natural Monument, environs of Lacanja-Chansayab Vill., primary forest, at light, 20–27.V.2007, M. Berezin, E. Tkatsheva (ZIN).

DESCRIPTION. *Male* (holotype). Size, colortation and structure of body very similar to those of *M.* (*M.*) *selva* **sp.n.**, but: antennae completely light; fore tibia with slightly narrower and lighter (dark brown to greyish brown) similar marks around tympana as well as with both tympanic membranes having two longitudinal darkened stripes (dorsal blackish and ventral greyish brown) separated from each other by narrow light longitudinal stripe (Figs 158, 159); tegmina with proximal part of interradial area almost twice narrower (compare Figs 250 and 251), with stridulatory apparatus having slightly shorter both each mirror and left stridulatory vein (see Figs 278, 279 and 280, 281), and with this vein having hardly less numerous (87-88) and lighter ventral teeth (largest of these teeth almost 1.3-1.5 times as long as in *M. selva* **sp.n.**, and teeth in submedial part of this vein much longer than in this species; for comparison see Figs 306 and 308); cercus longer in relation to genital plate, and with claw-shaped apical spine barely sinuate (but not simply hook-like) in posterodorsal view (see Figs 343, 345 and 346, 348); genital plate with api-

cal notch somewhat less deep and rather widely and roundly angular (see Figs 344 and 347).

*Female* unknown.

*Length* in mm. Body 24; body with wings 48; pronotum 5.7; tegmina 37; hind femora 16.5.

COMPARISON. Differences from the very similar and sympatric *M.* (*M.*) *selva* **sp.n.** are given above, and from all other congeners, the new species differs in the same characters as this species.

### *Microcentrum* (*Microcentrum*) *nigrolineatum boreale* Gorochov, **subsp.n.**

Figs 235–237, 252, 282, 283, 305, 351–354, 377, 378.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, "11 km on 230º from Puerto Bermudes", 10º29.9′ S, 75º03.1′ W, 713 m, forest, at light, 10–12.III.2011, V. Sinyaev, A. Poleschuk (ZIN). *Paratypes*: 1 female, same data as for holotype (ZIN); 3 males, same department, Atalaya Prov., ~35 km NWW of Atalaya Town on Ucayali River, environs of Sapani Vill., ~300 m, primary forest, at light, 20–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Iserskyy (ZIN); 1 male, same country, Junin Department, Satipo Prov., ~40 km NE of Satipo Town, environs of Calabaza Vill., ~2000 m, primary forest, at light, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Iserskyy (ZIN); 8 males, same province, ~25 km SE of Satipo Town, environs of Rio Venado Vill., 11.11552º S, 74.46307º W, ~1200 m, primary forest, at light, 20–23.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN); 4 males, same data, but 1000–1200 m, 5–9.XII.2017, A. Gorochov, G. Irisov (ZIN); 5 males, same province, Pampa Hermosa Distr., waterfall "Cristal" near Pacasmayo Vill., 1400–1600 m, 11°22′02′′ S, 74°41′55′′ W, primary forest, at light, 8–13.XII.2018, A. Gorochov (ZIN); 2 males, same province, Rio Tampo Distr., ~6 km N of Pichiguia Vill., "Reserva Comunal Ashaninka", 11.35824º S, 74.03205º W, ~500 m, primary forest, at light, 14–23.XI.2017, A. Gorochov, G. Irisov (ZIN); 2 males, 3 females, same country, Cusco Department (NW), environs of Miaria Vill. on Urubamba River, 11.33502º S, 72.99284º W, primary forest, at light, 8–11.X.2021, A. Gorochov (ZIN); 1 male, same department, La Convencion Prov. or Calca Prov., 50–55 km N of Quillabamba Town, environs of Huillcapampa Station of SERNANP, 12.34083º S, 72.65147º W, 600–800 m, primary forest, at light, 16–22.X.2021, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance similar to that of type species of *Microcentrum* (*M. rhombifolium*) but with some characteristic features: coloration green with yellowish area on anterior part of head under median ocellus, dorsum of upper rostral tubercle, a pair of large spots behind eyes, bands along lateral carinae of pronotum, stripe along tegminal M stock and along free part of MP, and distal half of costal tegminal edge, as well as with blackish longitudinal line along Sc stock in each tegmen and on each tympanic membrane (other parts of fore tibia uniformly green, and transparent wing membrane as well as coloration of cercal claw-like spinule similar to those of *M. jalisco* **sp.n.** and *M. sympatricum* **sp.n.**) (Figs 235–237, 252, 282, 283, 354); venation of tegmina with anterior RS branch ending at tegminal apex but not before it, and very small yellow placulae, developed in nominotypical subspecies, indistinct (Fig. 252); stridulatory tegminal apparatus as in Figs 282 and 283, with left stridulatory vein having 88–90 ventral teeth gradually increasing from most medial top to middle part of this vein and gradually demininishing from this part to most lateral top (17–20 most medial teeth light greenish, all others light brown, and 3–4 most lateral teeth very small; Fig. 305); cercus with short distal part rather strongly curved and directed medially, and with narrow dark brown claw-like apical spinule having acute apex (Figs 351, 354); genital plate with very short rounded and rather wide posteromedian notch, and styles of this plate as in Fig. 352.

*Variations*. Some males more uniformly yellowish green; tegmina sometimes with reddish brown line (instead blackish one) along Sc stock or without any darkened lines on tegmina and on outer tympanic membranes; anterior branch of tegminal RS sometimes ending subapically; teeth of left stridulatory vein insignificantly varied in number; genital plate varied from almost truncated between styles to having somewhat deeper (than in holotype) and angular posteromedian notch (Fig. 353).

*Female*. Coloration and structure of body as in males, but tegmina insignificantly wider (almost as in *M. rhombifolium*; Fig. 246), venation of dorsal tegminal fields similar to that of female of *M.* (*M.*) *jalisco* **sp.n.**, and abdominal apex distinguished from that of this female by genital plate with very small apical notch (Fig. 377) and by ovipositor as in Fig. 378.

*Length* in mm. Body: male 21–25, female 23–26; body with wings: male 50–54, female 52–56; pronotum: male 5.6–5.9, female 6–6.3; tegmina: male 39–42, female 40–44; hind femora: male 18–22, female 19–23; ovipositor 5.5–6.

COMPARISON. The new subspecies is very similar to *M.* (*M.*) *n. nigrolineatum* but differs from it in the above-mentioned structure of tegminal RS, the absence of any distinct placulae in the tegmina, and the claw-like apical spinule of the male cercus acute (but not obtuse) at the apex. From other congeners, the new subspecies is distinguished by the same features as the nominotypical subspecies of this species.

### *Microcentrum* (*Microcentrum*) *nitidum* Gorochov, **sp.n.**

Figs 238–240, 253, 284, 285, 307, 355–357, 379, 380.

ETYMOLOGY. The new species name is the Latin word "nitidum" (shiny) due to smooth and somewhat shiny external surfaces of the lateral tegminal fields.

MATERIAL. *Holotype* male, **Peru**: Ucayali Department, Atalaya Prov., ~ 35 km NWW of Atalaya Town, environs of Sapani Vill., ~ 300 m, primary forest, at light, 26–31.X.2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy (ZIN). *Paratypes*: 1 male, 4 females, same data as for holotype (ZIN); 1 female, same country, bank of Morona River not far from its mouth and near Puerto America Town, ~200 m, primary forest, at light, 20–23.I.2010, A. Gorochov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance more or less similar to that of *M.* (*M.*) *nigrolineatum boreale* **subsp.n.**, but coloration without traces of darkened or reddish line on tegmina along each Sc stem, and structure of body with following differences: rostrum somewhat wider (distance between antennal cavities approximately twice as great as scape width); upper rostral tubercle without distinct longitudinal median groove on dorsum; ocelli almost 1.5 times as small as in above-mentioned subspecies (Figs 238, 239); pronotum with slight and rounded anteromedian projection (Fig. 239) and with lateral lobes as in Fig. 240; tegmina slightly shorter (barely wider), and tegminal lateral field smooth and slightly shiny externally as well as with one distinct subapical RA branch (Fig. 253); tegminal stridulatory apparatus with left stridulatory vein contacting with lateral part of nearest vein (but not fused with this part; Fig. 284) and having about 78 ventral teeth (row of these teeth more arcuately curved in medial half, with few smaller and light brown most medial teeth, and with brown larger other teeth except for 7–8 lighter and smaller most lateral teeth located more obliquely than previ-

ous brown teeth; Fig. 307), and with region of chords in right tegmen slightly shorter than that of *M.* (*M.*) *n. borealis* **subsp.n.** (Fig. 285); abdominal apex practically indistinguishable from that of this subspecies (Figs 355, 357), but genital plate with small (shallow) and roundly angular apical notch between styles (Fig. 356).

*Variation*. Second male with stridulatory vein almost fused with lateral part of nearest vein, and with apical notch of genital plate barely deeper; number of ventral teeth on left stridulatory vein insignificantly varied.

*Female.* Coloration and structure of body as in male, but lateral tegminal field sometimes with 2 subapical RA branches, as well as tegminal dorsal fields and abdominal apex indistinguishable from those of *M.* (*M.*) *n. boreale* **subsp.n.** except for genital plate having apical part barely notched (Figs 379, 380).

*Length* in mm. Body: male 21–22, female 20–27; body with wings: male 44–46, female 45–50; pronotum: male 5.2–5.7, female 5.6–6.4; tegmina: male 35–37, female 36–41; hind femora: male 16.5–18, female 17–19.5; ovipositor 5–5.5.

COMPARISON. The new species differs from *M.* (*M.*) *nigrolineatum* in a wider head rostrum, the absence of darkened or reddish lines on the tegminal lateral fields, and a slightly different left atridulatory vein (compare Figs 282, 305 with 284, 307) and shape of the tegmina and female genital plate (see Figs 252, 377 and 253, 379). From *M.* (*M.*) *amacayacu*, the new species is distinguished by a much wider proximal part of the tegminal interradial area (this part is almost twice as wide as that of *M. amacayacu*) and a significantly thinner (narrower) claw-like spinule of the male cercus; from *M.* (*M.*) *lucidum*, by almost round (not vertically elongate) eyes and distinctly narrower distal halves of the tegmina; from *M.* (*M.*) *surinamense*, by slightly less longitudinal eyes, by a longer medial portion of the left stridulatory vein running from the most distal (most curved) part of this vein to the anal tegminal edge, and by a well developed nearest vein which is also not pressed to stridulatory vein; from *M.* (*M.*) *nauticum*, by the absence of a distinct longitudinal concavity on the upper rostral tubercle dorsum, and by the most convex part of the anal edge in the male tegminal field more rounded and located somewhat behind the apex of the dorsal tegminal field (*vs* this most convex part is more angular and located very near the apex of the dorsal tegminal field); and from all other species of this subgenus, by the same characters as *M.* (*M.*) *nigrolineatum*.

## *Microcentrum* (*Rotundovapex*) *totonacum* (Saussure, 1859)
Figs 256, 257, 290, 291, 309, 361–363, 381, 382, 392–395.

= *Phylloptera* (*Orophus*) *totonaca* Saussure, 1859

MATERIAL. *Neotype* (here designated) male, **Mexico**: Chiapas State, environs of Tuxtla Gutierrez City near El Ocote Reserve, 600–1000 m, primary forest, at light, 19–24.V.2006, A. Gorochov, M. Berezin (ZIN). *Other material*: 1 male, same data as for neotype (ZIN); 1 male, same state, ~130 km WN of Tapachula Town, environs of Ejido Las Golondrinus near El Triunfo Reserve, 800–1000 m, primary forest, on leaf of tree at night, 13–17.V.2006, A. Gorochov, M. Berezin (ZIN); 2 females, same country, Veracruz State, 15–20 km NE of Catemaco Town, Los Tuxtlas (biostation of Mexico University), 2 km from Mexican Gulf, primary forest on hills, at light, 6–17. XI.2006, A. Gorochov, A. Ovtschinnikov (ZIN).

REDESCRIPTION. *Male* (neotype). General appearance somewhat similar to that of *M.* (*M.*) *nigrolineatum* and *M.* (*M.*) *rhombifolium*. Coloration uniformly light greenish but with light brownich eyes, light brown to greyish brown middle and distal parts of antennal flagellum, numerous and small dark dots on pronotum (except for central part of disc and lower two thirds of lateral lobes) and on tegmina along lateral edge of each dorsal field as well as on head dorsum and on legs (but dots on head and fore femur sparser and very small, on bases of legs as well as on middle femur and all tarsi practically absent, on hind femur located only in its distal part, and on hind tibia located almost only along its dorsal surface), transparent some membranes in stridulatory apparatus of right tegmen and majority of membranes in hind wings, and dark brown dorsoapical denticle at cercal apex. Structure of body with following characteristic features: head with distance between antennal cavities approximately 1.5 times as great as scape width; upper rostral tubercle with distinct longitudinal dorsomedial concavity on upper rostral tubercle (Figs 392, 393); pronotal disc with anterior and posterior edges roundly concave and convex, respectively (Fig. 393); lateral pronotal lobes as in Fig. 394, but their dorsal edges forming slightly rounded carinae (along lateral edges of disc) crossed by a pair of poorly distinct additional transverse sulci of disc slightly behind normal transverse sulci (these additional sulci sometimes barely distinct also in some other congeners); tegmina long and somewhat widened (almost oval), with venation and stridulatory apparatus as in Figs 256, 290, 291; stridulatory vein of left tegmen with barely arcuated ventral row from 20–22 light and small medial teeth, 57–58 larger brown teeth and 3–4 smaller but also brown lateral teeth (Fig. 309); abdomen with posterior edges of tergites almost straight, but this edge in last tergite widely convex; epiproct, paraproct and cerci almost as in other males of this genus, but cercus with barely thickened distal part having small rounded (soft) ventroapical lobule as well as small hooked and heavily sclerotized dorsoapical denticle (these lobule and denticle almost equal to each other in size, located very near each other and directed more or less medially; Figs 361, 363); genital plate almost elongately triangular but with moderately small and rounded posteromedian notch as well as with a pair of rather large and elongated styles (their length almost 4 times as great as depth of above-mentioned notch; Fig. 362).

*Variations*. Male from environs of El Triunfo Reserve with less numerous darkened dots (they absent on head, tegmina and most part of legs), and with slightly shorter (less longitudinal) branches of tegminal MA; all males (except for neotype) with tegmina having MA and posterior branch of RS not contacting with each other, and subarea between these veins and RS stock slightly smaller (shorter); number of ventral teeth in left stridulatory vein and depth of posteromedian notch in genital plate insignificantly varied.

*Female*. Coloration and structure of body most similar to those of male from environs of El Triunfo Reserve but with following features: lateral carinae of pronotum with additional notches (sulci) more distinct in dorsal view than in all males of this species and in many other congeners (Fig. 395); lateral tegminal field with MA and posterior RS branch as in neotype (Fig. 257); dorsal tegminal fields and abdomen almost as in other females of this genus, although genital plate as in Fig. 381, and ovipositor having apical part more angularly rounded (upper valve with denticles along distal two thirds of dorsal edge, and lower valve with denticles only along roundly curved apical part; Fig. 382).

*Length* in mm. Body: male 22–26, female 21–25; body with wings: male 48–51, female 51–56; pronotum: male 5.7–6, female 6.7–6.9; tegmina: male 37–40, female 39–44; hind femora: male 18–20, female 22–25; ovipositor 6.5–7.

REMARK. This species was very briefly described by Saussure [1859] from "Mexico" and probably recorded by Hebard (1932) from Veracruz State of Mexico. Any suitable

description of this species is absent up to now. Moreover, Hollier and Heads [2015] established that its type material is absent in the Natural History Museum of Geneve (where this material should be deposited), but there is a male placed under *M. retinervis* which may be a syntype of *M. totonacum*. However, there is no way to test this hypothesis, and we must consider the type material of *M. totonacum* as lost. In this connection, and as a result of the absence of any possibility for dependable determination of this species, I designate here one of my males (according to the publications cited) as the neotype of "*Phylloptera* (*Orophus*) *totonaca* Saussure, 1859" (= *M. totonacum*). The small differences between my specimens of this species may be subspecies ones, but this material is insufficient for subspecies division.

### *Microcentrum* (*Rotundovapex*) *tamaulipas* Gorochov, **sp.n.**

Figs 260, 383, 384, 399–401.

ETYLOMOGY. The new species is named after the Tamaulipas State where it was collected.

MATERIAL. *Holotype* female, **Mexico**: Tamaulipas State, El Cielo Reserve near "San Jose in 15 km from Gomez Farias", 1400 m, 14.XI.1998, D. Kasparyan (ZIN).

DESCRIPTION. *Female* (holotype). General appearance very similar to that of *M.* (*R.*) *retinerve* and of *M.* (*R.*) *louisianum*. Coloration of body uniformly greenish but with dark brown eyes, greyish brown middle part of antennal flagellum (its distal part missing), numerous small dark dots on pronotal disc as well as on fore and middle tibiae, darkened inner tympanic membrane, 2 dark stripes on outer tympanic membrane, and several darkened marks on fore and hind femora (fore femur with 3 dorsomedial groups of dark dots and 3–4 darkened denticle-like spines on its ventromedial edge; hind femur with larger dorsomedial group of dark dots on distal part and several darkened denticle-like spines on its both ventral edges). Head with distance between antennal cavities approximately 1.8 times as great as scape width; upper rostral tubercle with distinct but not deep dorsal longitudinal groove; lower rostral tubercle barely projecting before upper one (Figs 399–401). Pronotum with disc having anterior edge roundly concave, and posterior one widely rounded; lateral pronotal lobe high and short (especially in lower part), and with anteroventral edge almost obliquely straight (Figs 400, 401). Tegmina rather short but not very wide (their length approximately 1.7 and 5.7 times as great as lengths of hind femur and of pronotum, respectively); lateral tegminal field with distal portion moderately narrow, with RS having more or less long (almost longitudinal) branches, and with RA having one subapical branch; hind wings clearly protruding beyond tegminal apices (Fig. 260). Abdominal apex typical of female of this genus but with ovipositor having denticulated part of lower valves somewhat longer than in *M.* (*R.*) *retinerve* (this part more similar to that of *M. louisianum* but with apical denticle clearly larger than nearest ones, i.e., this denticle almost as in *M. retinerve*; compare Figs 3 and 384); genital plate shortly triangular, with longitudinal median keel-like carina moderately high but almost rounded in transverse section, and with apex narrowly rounded (almost angular; Fig. 383).

*Male* unknown.

*Length* in mm. Body 23; body with wings 41; pronotum 5.4; tegmina 31; hind femora 18; ovipositor 5.8.

COMPARISON. The new species looks most similar to *M.* (*R.*) *louisianum*, as it lacks dark brown microscopical setae on the pronotum as well as has more distinct dark marks and some characteristic features of the ovipositor (see the description above), but differs from the latter species in distinctly shorter tegmina (in *M. louisianum*, the female tegmina are almost 1.9 and 7 times as long as its hind femur and pronotum, respectively) and the presence of a larger apical denticle on each ventral valve (*vs* all denticles of this valve are almost equal to each other in size). This new taxon might be treated as a subspecies of this species, but Spooner (1986) indicated that the female genital (= subgenital) plate of *M.* (*R.*) *louisianum* is "consisting of two lateral processes", and such structure of this plate is very different from all other congeners (including the new species). From *M.* (*R.*) *retinerve* and *M.* (*R.*) *stylatum*, considered by Hebard [1939] as similar to *M.* (*R.*) *louisianum*, the new species is distinguished by the following characters: from the first species (*M. retinerve*), by the absence of dark brown microscopical setae on the pronotum, shorter wings, and the longer and more roundly curved denticulated part of the ovipositor ventral valve; from the second species (*M. stylatum*), by the pronotal lateral lobes narrower in their ventral parts, the tegmina narrower in their distal portions, the tegminal lateral field with a long subapical branch of RA (*vs* this branch of RA is possibly absent, and then tegminal RS branches are located distinctly more distally) or with a distinctly longer proximal part of RS before its bifurcation.

### *Microcentrum* (*Rotundovapex*) *foliolum* Gorochov, **sp.n.**

Figs 259, 385, 386, 396–398.

ETYMOLOGY. The species name is the Latinized Greek word "foliolum" (small leaf) due to the general view of the tegmen.

MATERIAL. *Holotype* female, **Costa Rica**: "San José, Biolley ([18]98)" (ZIN).

DESCRIPTION. *Female* (holotype). General appearance more or less similar to that of *M.* (*M.*) *concisum*, *M.* (*M.*) *lobophylloides*, *M.* (*M.*?) *veraguae* and *M.* (*M.*?) *championi*. Body coloration uniformly greenish but with light brown eyes, brown longitudinal line on inner tympanic membrane, and small dark dots on lateral parts of pronotal disc and on legs (latter dots well distinct only on fore and middle tibiae as well as poorly distinct on middle part of fore femur and on distal portion of hind femur). Head with distance between antennal cavities and structure of rostral tubercles practically as in *M.* (*R.*) *tamaulipas* **sp.n.** (Figs 396, 397); pronotum with distinct carinae along lateral edges of disc, with concave anterior and convex posterior edges of disc (Fig. 397), and with lateral lobes as in Fig. 398; tegmina rather long and wide, with distinctly convex costal and anal edges, narrowly rounded apex, convex venation (tegmen looking as slightly corrugated leaf), rather wide interradial area near proximal part of RS anterior branch (this area about 1.2 times as wide as RS-MA area in place of RS first bifurcation), and 2 long subapical branches of RA (Fig. 259); legs with tympanal region of fore tibia weakly widened (almost 1.6 times as wide as middle part of this tibia); abdomen typical of female of this genus, but distal part of lower valves of ovipositor almost as in *M.* (*R.*) *tamaulipas* **sp.n.** (however, denticles of lower valves approximately equal in size; Fig. 386), and genital plate triangular and partly compressed laterally (i.e., forming rather high and wide as well as keel-like longitudinal ventromedian fold) as well as having widely rounded apex with very small posteromedian notch (Fig. 385).

*Male* unknown.

*Length* in mm. Body 25; body with wings 44; pronotum 5.7; tegmina 34; hind femora 19.5; ovipositor 5.3.

COMPARISON. The new species is distinguished from *M.* (*M.*) *concisum*, *M.* (*M.*) *lobophylloides*, *M.* (*M.*?) *verag-*

*uae* and *M.* (*M.*?) *championi* by a narrower space between the antennal cavities (in these species, this space is 2.5–3 times as wide as the scape, but in the new species, this ratio is about 2) and the absence of anteromedian pronotal denticle; additionally, the new species differs from *M.* (*M.*) *concisum* and *M.* (*M.*) *lobophylloides* in the ovipositor apex not transversely truncated, from *M.* (*M.*?) *veraguae* in less widened tympanal region of the fore tibia (in *M. veraguae*, this widened part is not less than twice as wide as middle part of this tibia), and from *M.* (*M.*?) *championi* in distinctly wider proximal part of the interradial tegminal area and in the presence of 2 subapical branches of tegminal RA (*vs* the interradial area near the place of RS bifurcation is more than twice as narrow as RS-MA area, and RA has only one subapical branch). The tegminal shape in the new species is also more or less similar to that of *M.* (*R.*?) *policromica, M.* (*R.*?) *frutetorum* and *M.* (*R.*?) *vepretorum*, but the new species is distinguished from them by shorter (narrower) lateral pronotal lobes and some other features: from the first species, by somewhat wider distance between the antennal cavities; from the second one, by the tegmina in the region of RS bifurcation with RA-MA area distinctly wider than the area between MA and the anal edge (*vs* RA-MA area slightly narrower than the latter area); and from *I. vepretorum*, by the tegmina with more longitudinal RS branches and with a longer area located distad to anterior RS branch (i.e., between this branch and the tegminal apex) and having 2 subapical RA branches (*vs* this area has only one subapical RA branch). Finally, the new species is somewhat similar to sympatrical *M.* (*R.*) *nigrosignatum*, but the first species differs from the second one in a less strongly convex anal edge of the tegminal lateral field, a narrower proximal part of the area between RS branches in this field, and less numerous subapical branches of tegminal RA (1 instead 2) (compare Figs 258 and 259).

### *Microcentrum* (*Paradoxirostrum*) *ornatum* Gorochov, **sp.n.**

Figs 160, 161, 255, 288, 289, 310, 358–360, 388–391.

ETYMOLOGY. The species name is the Latin word "ornatum" (ornate, decorated) due to characteristic coloration of its male tegmina.

MATERIAL. *Holotype* male, **Mexico**: Veracruz State, 15–20 km NE of Catemaco Town, environs of Los Tuxtlas (biostation of Mexico University) in 2 km from Mexican Gulf, primary forest on hills, at light, 6–17.XI.2006, A. Gorochov, A. Ovtschinnikov (ZIN). *Paratype* male, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance similar to that of *M.* (*P.*?) *cribrosum*. Body coloration light greenish with yellowish tinge, reddish brown eyes, light brown to greyish brown middle and distal portions of antennal flagellum, short blackish longitudinal stripe on dorsal surface of fore tibia between tympana (Figs 160, 161), large dark brown spot on basal part of dorsal field in left tegmen (this spot including stridulatory vein; Fig. 288), brown and rose smaller marks on same parts of right tegmen (Fig. 289), transparent membranes of mirror and of nearest cell in right tegmen as well as majority of membranes in hind wings, and darkened (brown to dark brown) claw-like spinule of cercus. Head dorsum (including that of upper rostral tubercle) almost flat; upper rostral tubercle wide, with horizontally lamellar and almost truncated (even barely concave) apical part, and with 2 slight dorsal grooves (transverse dorsal groove at base of this tubercle and longitudinal but rather short median groove before it); lower rostral tubercle also wide and anteriorly flat, but its apical part slightly sinuate in front and pressed to apical part of upper rostral tubercle; median ocellus very small, much smaller than elongate and not large lateral ocelli; distance between antennal cavities almost 2.3 times as great as scape width (Figs 389, 390). Pronotum rather long in upper half, with very strong punctuation looking almost as "archediction" in tegmina, with more or less distinct dorsolateral carinae, with slightly concave anterior and widely convex posterior edges of disc, and with lateral lobes having obliquely straight (even barely concave) anteroventral edges (Figs 390, 391). Tegmina very wide but rather long, with anal edge distinctly arcuate in middle portion, and with venation of lateral field as in Fig. 255 (unlike *M. cribrosum*, anterior RS branch in proximal part more roundly curved and with more longitudinal middle portion, and proximal part of interradial area distinctly narrower); stridulatory apparatus dorsally as in Figs 288, 289, and left stridulatory vein with 75–76 ventral teeth forming arcuate row from 7 smaller and light brown medial teeth (these teeth quickly increasing from most medial top), 8–9 similar lateral teeth (but these teeth gradually decreasing towards most lateral top) and numerous large dark brown teeth between previous smaller teeth (however, these large teeth also gradually diminishing in distal half of this dark row) (Fig. 310). Fore tibia with tympanal region almost twice as wide as this tibia in middle part; hind femur approximately 6 times as long as wide. Abdominal apex similar to that of majority of congeners in almost straight posterior edges of tergites and slightly arcuate cercus having more or less rounded (soft) apical lobule and claw-like (heavily sclerotized) apical spinule, but above-mentioned lobule rather small, cercal claw-like spinule very small (Figs 358, 360), and genital plate elongately triangular as well as with rather long styles and distinct but moderately narrow and not deep angular posteromedian notch (Fig. 359).

*Variation*. Second male distinguished from holotype only by slightly smaller and somewhat lighter darkened parts of tegmina (i.e., tegmina with brown and light brown marks instead dark brown and brown ones, respectively).

*Female* unknown.

*Length* in mm. Body 22–24; body with wings 43–45; pronotum 5.2–5.7; tegmina 35–37; hind femora 15–16.

COMPARISON. The new species is similar to *M.* (*P.*?) *cribrosum* in body shape and tegminal coloration, but it is distinguished from the latter species by a much wider (longer) area between the proximal parts of RS branches (the anterior branch of RS in *M. cribrosum* is strongly and almost angularly curved in proximal part near RA stock, and its middle portion is obliquely transverse; but in the new species, this branch is more roundly curved in proximal part near RA stock and more longitudinal in middle portion). From other similar congeners, the new species differs in the head with the characteristic upper rostral tubercle (see the subgeneric key above) and in spotted dorsal tegminal fields of male.

### *Microcentrum gracilissimum* Gorochov, **sp.n.**

Figs 261, 292, 293, 311, 364–366, 402–404.

ETYMOLOGY. This species name is the Latin word "gracilissimum" (most slender) due to the slender body and narrow tegmina.

MATERIAL. *Holotype* male, **Honduras**: "Comayagua, Cerro Azul Meambar Nat. Park", 14º52′18′′ N, 87º54′18′′ W, 785 m, 7–14.VII.2013, A. Pushenkov (ZIN).

DESCRIPTION. *Male* (holotype). Body medium-sized for this genus. Coloration greenish but with following marks: eyes very light brown; pronotum with numerous greyish brown dots on disc (except for hind lobe) and on lateral lobes along their dorsal edges as well as with dark stripe (consisting of

denser dots) on each of these lobes along its dorsal edge (Figs 402–404); legs with lighter (brownish) dots on dorsal and inner surfaces of both fore femur and fore tibia as well as on distal part of hind femur and on outer surfaces of middle and hind tibiae; wings with whitish interrupted stripes on tegmina along branches of R and of MA (Fig. 261), with transparent membranes of both mirror and nearest cell in right tegmen, and with transparent majority of membranes in hind wings; abdomen with brown to dark brown claw-like spinule at cercal apex. Head typical of *Rotundovapex* **subgen.n.**: distance between antennal cavities approximately 1.5 times as great as scape width; upper rostral tubercle with distinct median longitudinal concavity on dorsum reaching apex of this tubercle; lower rostral tubercle with straight dorsal (transverse) edge and distinct round median ocellus which almost 1.5 times as small as each lateral ocellus (Figs 402, 403). Pronotum rather long, with almost keel-like carinae along lateral edges of disc, with sinuate anterior and rounded posterior edges of disc, with distinct transverse but somewhat arcuate fold separating hind lobe from rest of disc, and with lateral lobe rather long and having ventral edge almost straight but somewhat obliquely situated (Figs 403, 404). Tegmina long and narrow, with RS branches almost longitudinal (antrerior branch of RS bifurcated, and one of its branchlets ending very near tegminal apex), with RA having 2 longitudinal subapical branches (one of them more than twice as long as other branch), with MA having 3 obliquely longitudinal branches occupying intermedial area which significantly wider than radial area (Fig. 261), and with stridulatory apparatus as in Figs 292, 293 (left stridulatory vein weakly arcuate, with about 170 brown ventral teeth which gradually increasing in medial half of this vein and quickly decreasing in its short lateral part; Fig. 311); hind wings significantly protruding beyond tegminal apices. Legs with tympanal region of fore tibia approximately 1.8 times as wide as this tibia in its middle part; hind femur rather narrow, its length about 9 times as great as its maximal width. Abdomen typical of this genus but with cerci almost straight and having short distal part clearly curved medially (this part with almost elongately triangular claw-like spinule and with distinct soft lobule of same length near it; Figs 364, 366); genital plate moderately elongate, narrowing to rather narrow apex having distinct (but not large) and almost angular posteromedian notch (styles missing; Fig. 365).

*Female* unknown.

Length in mm. Body 24.5; body with wings 55; pronotum 7.3; tegmina 43; hind femora 24.

COMPARISON. The new species differs from all the congeners in the narrower tegmina with almost longitudinal branches of R and of MA as well as with whitish stripes along these branches, and in characteristic shape and coloration of the pronotum: the pronotal lateral lobes somewhat longer, with almost keel-like dorsal edges (*vs* these edges may be more or less carinate but not keel-like or almost keel-like), and with distinct dark stripes along these edges (after OSF, the similar stripes are developed in a syntype of *M. triangulatum* synonymized to *M. incarnatum*; but its male tegmina are clearly wider than in the new species: about 3 times and about 4 times as long as wide, respectively).

## Genus? *Lamprophyllum* Hebard, 1924

Type species (in original binomen): *Lamprophyllum micans* Hebard, 1924, by original designation.

NOTE. I had possibility to study only one of the three species included in this genus in OSF: *Phylloptera* (*Orophus*) *otomia* Saussure, 1859 (in original combination) described from the Veracruz State in Mexico. This species is very similar to representatives of the genus *Microcentrum*, as it has the head, pronotum, tegmina, legs and abdomen more or less typical of this genus (including the male cercal apex provided with a heavily sclerotized spinule and a soft lobule near it; Fig. 441), but its inner tympanum is slightly slit-like (i.e. with a narrow longitudinal fold covering insignificant part of its tympanic membrane; in *Microcentrum* s.l., this fold is undeveloped or almost undeveloped), and its ovipositor weakly reduced (with a rather narrow but apically almost truncated apex of the lower valve, and with rounded and extremely small denticles on this apex; Fig. 458). These characters allow us to include this species in a special subgenus of *Microcentrum* s.l. but not in any different genus. However, the type species of the genus *Lamprophyllum* (*L. micans*), insufficiently described and unstudied by me, is similar to *L.*? *otomium* in some non-genital characters and may be closely related to this species; in this connection, we may consider *Lamprophyllum* as an additional subgenus of *Microcentrum* s.l. Also it is necessary to indicate that the photographs of the male from "Museum d'Histoire Naturelle, Geneva", determined in OSF as *L. otomium*, belong probably to *L. micans*, because this male has a large dark spot on the base of the left dorsal tegminal field (such spot is absent in *L.*? *otomium*), and its left stridulatory vein is distinctly thicker than in *L.*? *otomium* (Figs 426, 427). If my identification of this male is correct, then the male cercal structure of *L. micans* shows that *Lamprophyllum* is in fact a subgenus of *Microcentrum* s.l.

## Genus *Acropsis* Uvarov, 1939

= *Acra* Brunner-Wattenwyl, 1878, homonym (see OSF).

Type species (in original binomen): *Acra tectiformis* Brunner-Wattenwyl, 1878, by original designation.

NOTE. Until now this genus consisted of three very similar species (OSF). They distinguished from all other Microcentrina members by their very characteristic tegmina: these tegmina are strongly widened, semisclerotized (coriaceus), with very shining external surface of the lateral field having slightly obliterated venation, with a narrowly rounded (almost angular) apical part, with the anal edge roundly angular near the dorsal field apex, and with the costal edge almost straight (except for its basal and distal portions) as well as having a convex ribbon-like stripe along this portion of the costal edge and along the rounded basal portion of this edge (Figs 420, 421). The other characters of *Acropsis* are similar to those of *Microcentrum* s.l., but the head usually has a deeper and groove-like longitudinal dorsomedian concavity (Fig. 405), the pronotum is with a sinuate posterior edge of each lateral lobe (Fig. 407), the both tympana are as the inner tympanum of *Lamprophyllum*? *otomium* in the structure, the male cercus differs from that of *Microcentrum* s.l. in the absence of a soft apical lobule (Fig. 444), and the ovipositor lacks distinct denticles (however, the apex of each lower valve is roundly truncated and evidently originating from the ovipositor similar to primitive ovipositors of the genera *Ischyra*, *Tropicophyllum* and *Tuaia* as well as to the ovipositors of the subgenera *Microcentrum* s.str. and *Carnavalia*; Fig. 459). Here, a new species of this genus has been added.

### *Acropsis meridiana* Gorochov, **sp.n.**
Figs 405–407, 420, 428, 429, 436, 442–444.

ETYMOLOGY. This species name is the Latin word "meridiana" (southern) due to the type locality of this species which is the southernmost in this genus.

MATERIAL. *Holotype* male, **Peru**: Department Cusco, "10 km to N from Marcapata", 13º25´ S, 70º54.3´ W, 1265 m, V. Sinyaev, S. Sinyaeva, Yu. Bezverkhov (ZIN).

DESCRIPTION. *Male* (holotype). General appearance similar to widely distributed *A. tectiformis* but with some characteristic features. Body coloration greenish with yellowish head having greyish areas on genae and on posteromedian part of dorsum as well as greyish brown most part of antennal flagellum, with yellowish grey pronotum having yellowish bands along lateral edges of disc and greenish hind lobe, with whitish narrow marginal stripe along costal tegminal edge and along lateral edge of dorsal tegminal field (Figs 405–407, 420, 428), with transparent membranes in stridulatory apparatus of right tegmen (Fig. 429) and in most part of each hind wing, and with yellowish tinge on legs and abdomen. Anterior surface of epicranium under eyes and rostrum slightly wrinkled; rostrum between antennal cavities approximately as wide as scape, with both rostral tubercles slightly bilobed at apices (Fig. 405, 406). Pronotum moderately long (but clearly highter than long), with slightly concave anterior edge of disc, with widely rounded posterior edge of hind lobe (Fig. 406), and with each lateral lobe as in Fig. 407. Tegmina less wide than in *A. tectiformis*, with narrower intermedial area (this area almost 1.2 times as narrow as costal area) and less angularly curved anal edge, with anterior RS branch more S-shaped than in this species and approximately 2 times as long as than RS stem before its bifurcation (in *A. tectiformis*, this ratio varied from 1 to 1.5; compare Figs 420 and 421); stridulatory apparatus (Figs 428, 429) with somewhat thicker stridulatory vein in left tegmen having barely sinuated row from following light ventral teeth: 7 very small lateral teeth located arcuately, short row from 4–5 teeth increasing towards medial top and located near previous teeth, barely concave row from 39–40 large and almost equal teeth reaching middle of this vein, and slightly arcuated row from about 50 medial teeth slowly and gradually decreasing towards medial top (Fig. 436). Hind wings distinctly protruding beyond tegminal apices. Mesothoracic sternite with keel-like lateral parts curved downwards and having angular posterior lobes (these lobes slightly curved laterally); metathoracic sternite as in other congeners (i.e., shorter than previous sternite, with lateral parts directed downwards/laterally and having rounded posterior lobes). Abdomen with majority of tergites


**Figs 405–419.** Head and pronotum: 405–407 — *Acropsis meridiana* **sp.n.**; 408–410 — *Philophyllia ingens magdalenae* **subsp.n.**; 411–413 — *Problemovapex nicaraguensis* **sp.n.**; 414–416 — *Syntechna longitegminalis* **sp.n.** (holotype); 417 — *Stilpnochlora marginella latistriata*; 418 — *Apoballa errabunda*; 419 — *Petaloptera zendala*. Head in front (405, 408, 411, 414, 417–419); head with pronotum from above (406, 409, 412, 415) and from side (407, 410, 413, 416).

**Рис. 405–419.** Голова и переднеспинка: 405–407 — *Acropsis meridiana* **sp.n.**; 408–410 — *Philophyllia ingens magdalenae* **subsp.n.**; 411–413 — *Problemovapex nicaraguensis* **sp.n.**; 414–416 — *Syntechna longitegminalis* **sp.n.** (голотип); 417 — *Stilpnochlora marginella latistriata*; 418 — *Apoballa errabunda*; 419 — *Petaloptera zendala*. Голова спереди (405, 408, 411, 414, 417–419); голова с переднеспинкой сверху (406, 409, 412, 415) и сбоку (407, 410, 413, 416).

having slight posteromedian convexity on each posterior edge, and with structures of abdominal apex typical of Microcentrina (Fig. 442), but medially curved distal part of cercus shortly and almost gradually tapering (thinning) to heavily sclerotized dark apical denticle (this denticle with obliquely truncated apex; Fig. 444), and genital plate with rather wide apex having distinct and transversely rectangular posteromedian notch as well as a pair of small and almost square lateral projections around it (these projections almost as long as short styles located on them; Fig. 443).

*Female* unknown.

*Length* in mm. Body 24; body with wings 50; pronotum 6.7; tegmina 38; hind femora 17.

COMPARISON. Differences from *A. tectiformis*, described from Ecuador, are listed above; but these species have also small differences in the left ventral stridulatory teeth (in *A. tectiformis*, these teeth form hardly arcuate row, but this row in the new species is barely sinuate; compare Figs 436 and 437). From *A. julianae* Mendez et Rafael, 2020, described from a more northern part of Brazil and similar to the new species in the structure of tegminal RS, this new species is distinguished by the anterior branch of this RS more S-shaped, by the tegminal intermedial area narrower than the costal tegminal area (in *A. julianae* as well as in *A. tectiformis* and *A. solimoesensis* Mendes et Rafael, 2020, this intermedial area almost as wide as the costal one; compare Figs 420 and 421), by the left stridulatory vein having a barely sinuated (not barely arcuated) row from ventral teeth, by the largest of these teeth less remarkably enlarged, and by the male cercus with a trapezoidal (apically truncated) but not rounded apical denticle. And from *A. solimoesensis* (Colombia), the new species differs in the same tegminal characters as from *A. tectiformis* and in a gradually tapering (thinning) apical part of the male cercus with a small and not hooked apical denticle (*vs* this part of the male cercus is widely rounded and with a hook-like but also small apical denticle).

## Genus *Philophyllia* Stål, 1873

Type species: *Philophyllia guttulata* Stål, 1873 by original monotypy.

NOTE. This genus is similar to the subgenus *Microcentrum* (*Carnavalia*), and this similarity is especially distinct in their tegminal structure: the both taxa have long and narrow tegmina with numerous yellowish or light brown placulae along each costal edge. These placulae are usually small


**Figs 420–422.** Left male tegmen: 420 — *Acropsis meridiana* **sp.n.**; 421 — *A. tectiformis*; 422 — *Philophyllia ingens magdalenae* **subsp.n.**
**Рис. 420–422.** Левое надкрылье самца: 420 — *Acropsis meridiana* **sp.n.**; 421 — *A. tectiformis*; 422 — *Philophyllia ingens magdalenae* **subsp.n.**

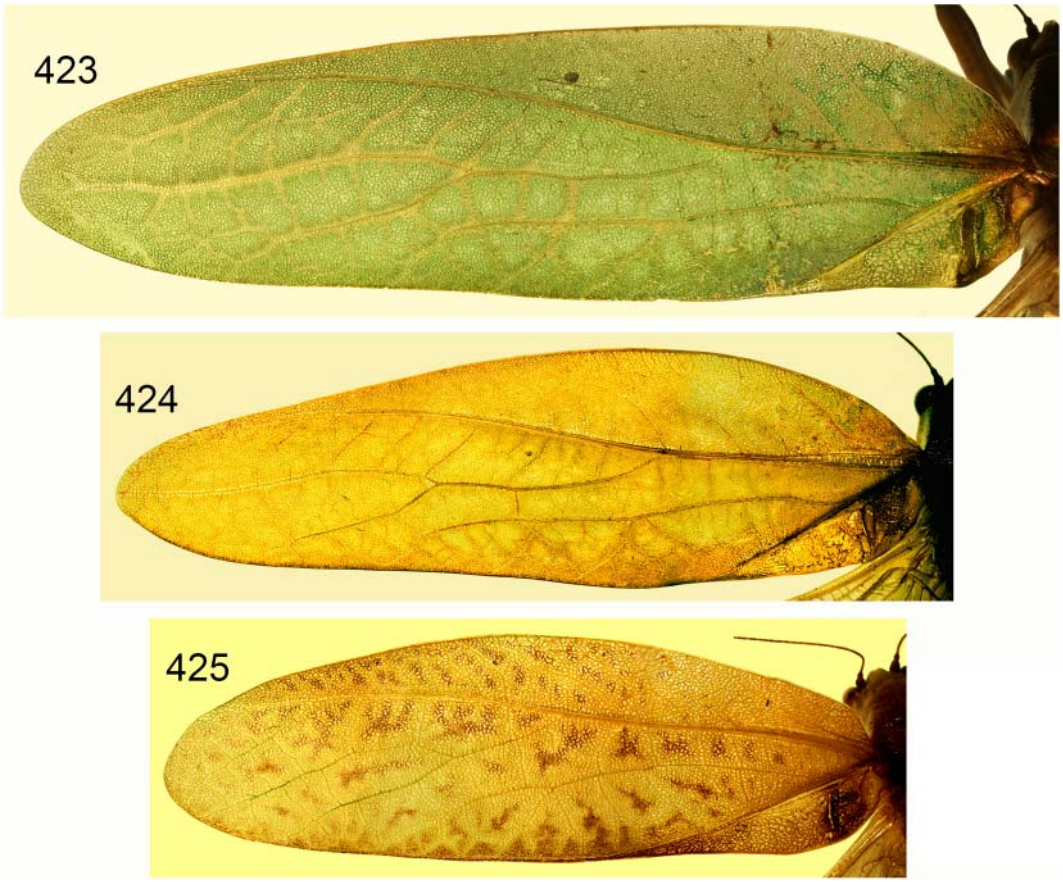
to moderately large and form a single row, but in the basal tegminal part of some *Philophyllia* species, they are strongly widened (or forming more than one row) and partly fused with each other. The main differences of this genus from *Microcentrum* s.l. are following: the male cercus lacks a soft apical lobule near the heavily sclerotized apical denticle or near any analogous apical structure (Figs 447, 448); the ovipositor lacks any denticles and with rather narrow but widely rounded (partly reduced) apical parts of the lower valves (this ovipositor is more or less similar to that of *Acropsis* and possibly also originated from the ovipositor with widely rounded or roundly truncated apices of the lower valves; Fig. 460). From *Ischyra* s.l. and its relatives, *Philophyllia* differs in the male cercus more or less gradually tapering to a small and heavily sclerotized apical structure (in *Ischyra* s.l., this cercus has a widely rounded apical part with a much smaller apical denticle or two very small denticles near each other), and/or in the both tympana open (not partly slit-like). Thus, *Philophyllia* seems to be most related to *Acropsis*, and its similarity to *Carnavalia* may be a result of convergence. However, the very gradually narrowing distal part of the male cercus as well as the narrowly rounded apical part of the ovipositor lower valve may indicate on a certain similarity to Stilpnochlorina **subtrib.n.**

*Philophyllia ingens magdalenae* Gorochov, **subsp.n.**
Figs 408–410, 422, 430, 431, 438, 445–447.

ETYMOLOGY. This subspecies is named after "Rio Magdalena", because its type locality is situated in environs of this river.

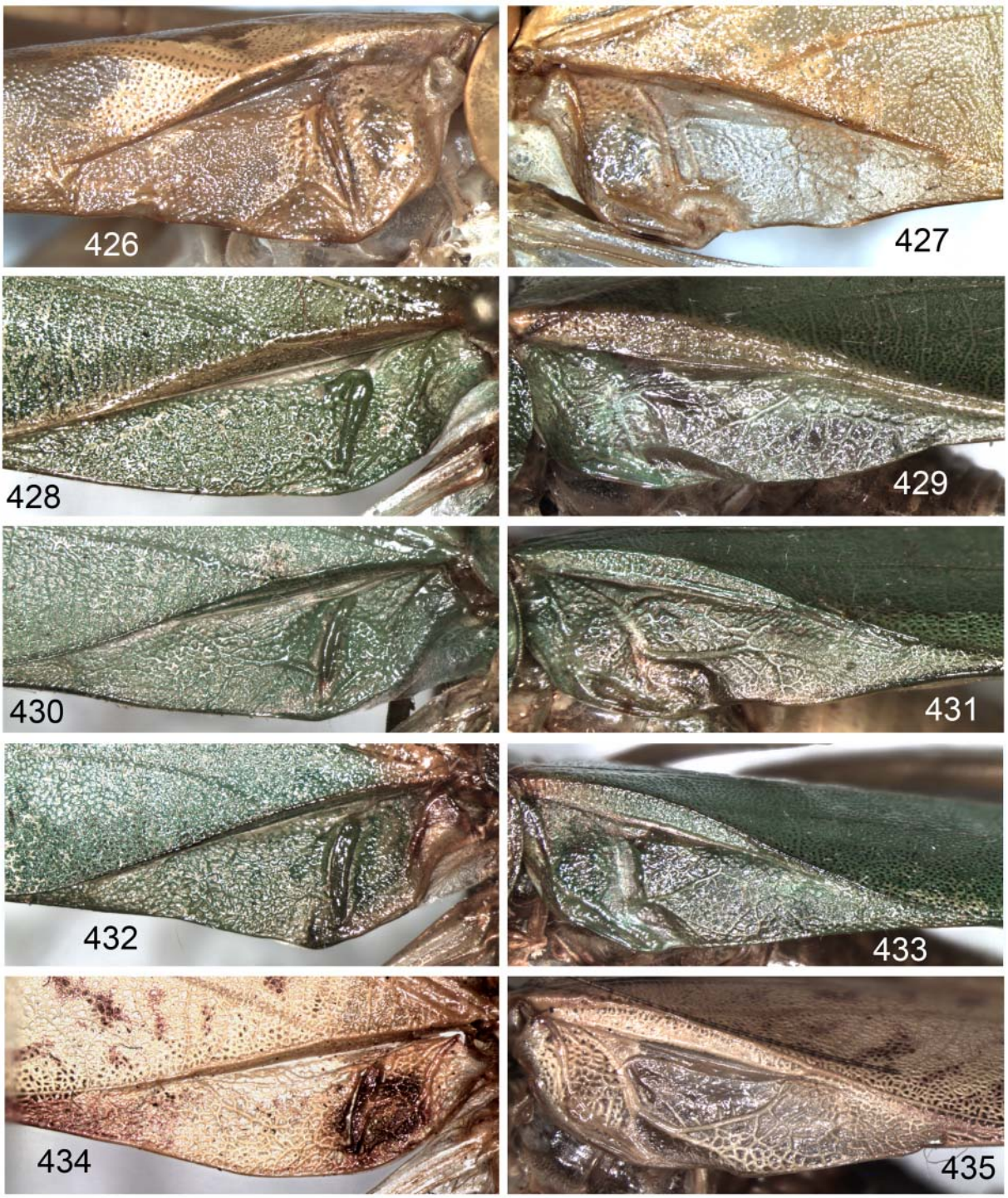
MATERIAL. *Holotype* male, **Colombia**: "Rio Magdalena / Columbia, A. S. / Woronov", 27.IV–9.V.1926 (ZIN). *Paratype* male, same data as for holotype, but IX.1926 (ZIN).

DESCRIPTION. *Male* (holotype). Size, coloration and structure of body approximately as in nominotypical subspecies (*Ph. i. ingens* Hebard, 1933). Head light brown with a pair of whitish oblique bands behind brown eyes (these bands running from lateral parts of rostral dorsum to posterior parts of genae), a pair of almost brown stripes along anterior edges of these bands and reddish brown to dark brown each antennal flagellum (Figs 408–410); tegmina greenish with yellowish stripe along each costal edge having one row of numerous small and more or less triangular placulae, and with partly transparent membranes of stridulatory apparatus of right tegmen (Figs 422, 430, 431); hind wings with transparent majority of membranes, greenish apical parts and greenish to yellowish venation; rest of body also greenish to yellowish, but all spines of hind leg almost light brown with brown and dark brown some apices, and apical parts of cerci blackish. Epicranium with distance be-




**Figs 423–425.** Left male tegmen: 423 — *Syntechna longitegminalis* **sp.n.** (holotype); 424 — *S. tarasca*; 425 — *Problemovapex nicaraguensis* **sp.n.**

**Рис. 423–425.** Левое надкрылье самца: 423 — *Syntechna longitegminalis* **sp.n.** (голотип); 424 — *S. tarasca*; 425 — *Problemovapex nicaraguensis* **sp.n.**




**Figs 426–435.** Male stridulatory apparatus: 426, 427 — *Lamprophyllum*? *otomium*; 428, 429 — *Acropsis meridiana* **sp.n.**; 430, 431 — *Philophyllia ingens magdalenae* **subsp.n.**; 432, 433 — *Syntechna longitegminalis* **sp.n.** (holotype); 434, 435 — *Problemovapex nicaraguensis* **sp.n.** Left (426, 428, 430, 432, 434) and right (427, 429, 431, 433, 435) tegmina.
**Рис. 426–435.** Стридуляционный аппарат самца: 426, 427 — *Lamprophyllum*? *otomium*; 428, 429 — *Acropsis meridiana* **sp.n.**; 430, 431 — *Philophyllia ingens magdalenae* **subsp.n.**; 432, 433 — *Syntechna longitegminalis* **sp.n.** (голотип); 434, 435 — *Problemovapex nicaraguensis* **sp.n.** Левое (426, 428, 430, 432, 434) и правое (427, 429, 431, 433, 435) надкрылья.

tween antennal cavities almost 1.5 times as great as scape width; upper rostral tubercle with rather wide but very shallow dorsal concavity; lateral ocelli almost equal to median one in size (Fig. 408). Pronotal and tegminal structure as in Figs 409, 410, 422, 430, 431; left stridulatory vein with rather short row of ventral teeth divided into 3 portions: several small and light lateral teeth gradually increasing towards middle of this vein; middle portion having rather numerous large and darkened teeth (this portion with short lateral part consisting of slightly smaller but quickly increasing teeth, and with most medial part distinctly convex in comparison with more medial portion); latter (medial) portion moderately long and consisting of smaller light teeth gradually decreasing towards medial top (Fig. 438). Abdomen with small and roundly angular posteromedian projections on second–sixth tergites, but second and sixth ones with these projections very small; structures of abdominal apex typical of Microcentrina, but distal portion of cercus almost straight and gradually tapering to rather thin but more or less widely rounded and shining apical part having medial surface flattened (i.e., this apical part non-uncinate; Figs 445, 447); genital plate with moderately large but rather narrow as well as rounded posteromedian notch, and with more or less wide lateroapical lobules around this notch (these lobules much wider than very small styles, and almost as long as these styles; Fig. 446).

*Variation*. Second male with light grey oblique bands behind eyes, whitish labrum and upper half of clypeus, light brown basal part of each antennal flagellum and stripe along posterior half of each costal tegminal edge, and slightly shallower posteromedian notch of genital plate.

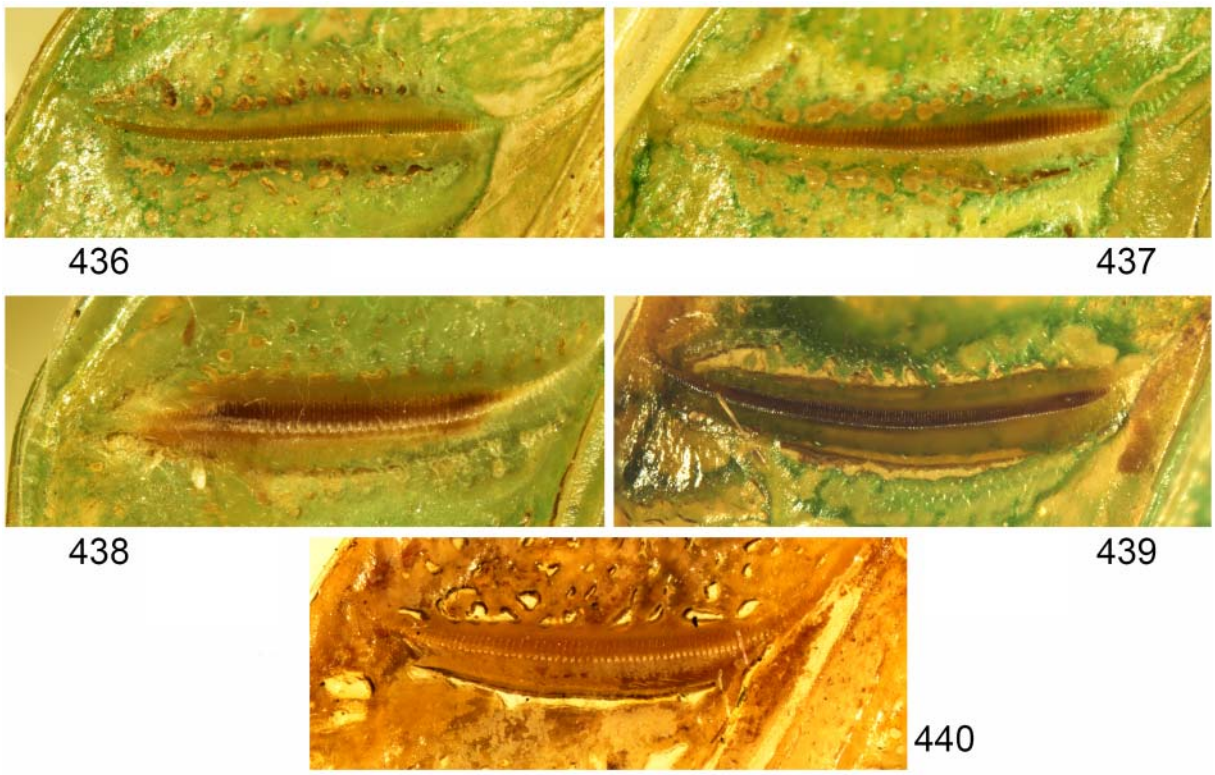
*Female* unknown.

*Length* in mm. Body 36–41; body with wings 76–80; pronotum 8.5–9.5; tegmina 62–65; hind femora 34–35.

COMPARISON. The new subspecies from Colombia differs from the nominotypical species, distributed in Central America, mainly in the significantly lighter (light brown) color of all spines of the hind femur (*vs* the ventral spines of this femur in *Ph. i. ingens* are distinctly black) and the absence of any dorsal projection on the apical part of the male cercus, and possibly in non-uncinate apical parts of the male cerci as well as a distinctly shallower and non-angular posteromedian notch of the male genital plate. The last two characters are based on a photograph of the abdominal apex of a possible *Ph. i. ingens* (from an unknown locality) published in OSF, as these characters are not entirely clear in the original description by Hebard [1933].

### *Philophyllia guttulata* Stål, 1873
Fig. 448, 460.

NOTE. This species name was synonymized with *Locusta laurifolia* Thunberg, 1815 by Brunner-Wattenwyl [1878] who treated the junior name to be valid. Thunberg's name is considered in OSF as a "primary homonym" of *Gryllus* (*Tettigonia*) *laurifolia* Stoll, 1813 which may be a real primary homonym of *Gryllus* (*Tettigonia*) *laurifolia* Linnaeus, 1758 [in accordance to OSF, Stoll's name is treated as a junior synonym of *Microcentrum incarnatum*, and Linnaean name, as a valid name for a species of the genus *Stilpnochlora*]. Thus, the opinion



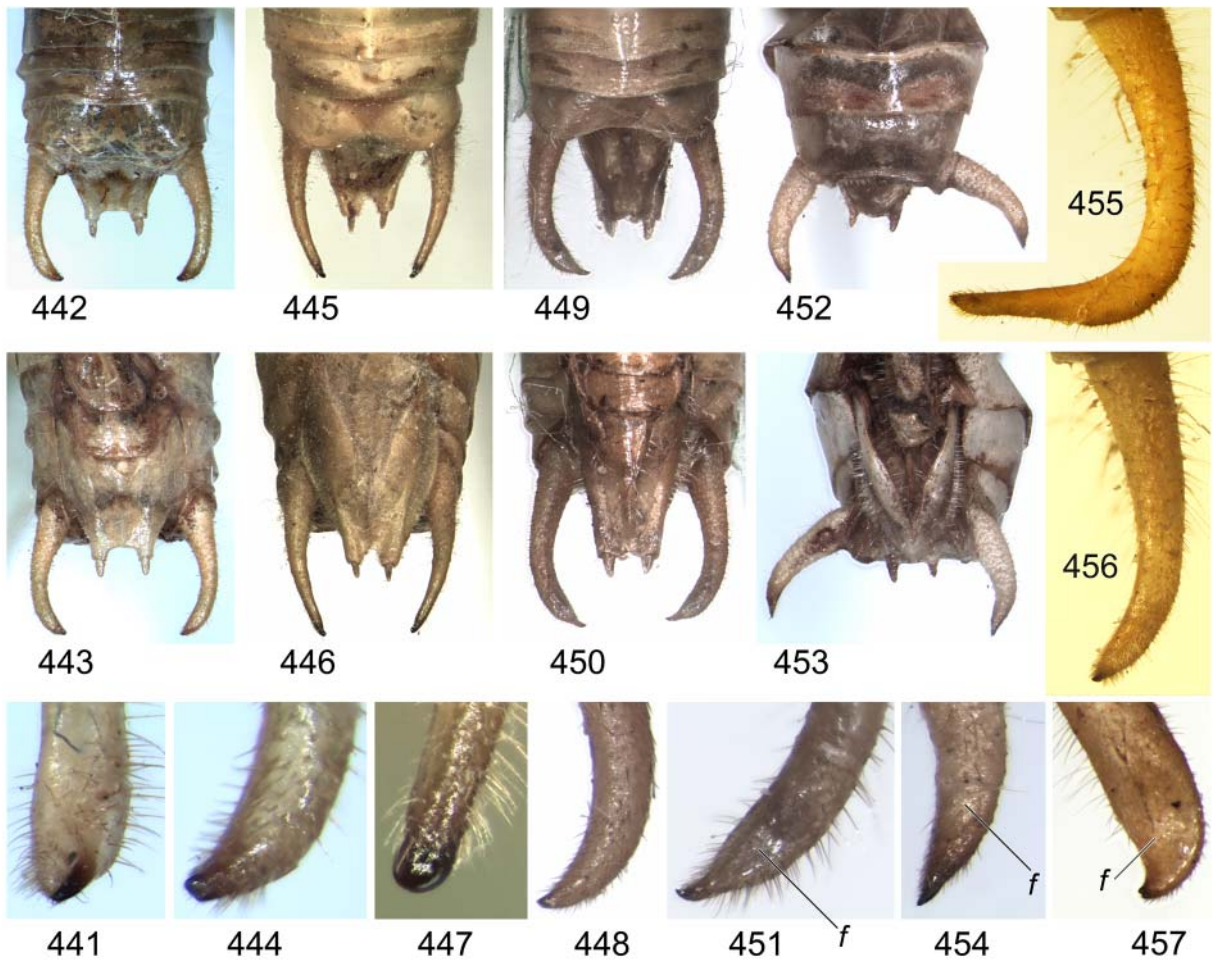

**Figs 436–440.** Stridulatory vein of left male tegmen from below: 436 — *Acropsis meridiana* **sp.n.**; 437 — *A. tectiformis*; 438 — *Philophyllia ingens magdalenae* **subsp.n.**; 439 — *Syntechna longitegminalis* **sp.n.** (holotype); 440 — *Problemovapex nicaraguensis* **sp.n.**
**Рис. 436–440.** Стридуляционная жилка левого надкрылья самца снизу: 436 — *Acropsis meridiana* **sp.n.**; 437 — *A. tectiformis*; 438 — *Philophyllia ingens magdalenae* **subsp.n.**; 439 — *Syntechna longitegminalis* **sp.n.** (голотип); 440 — *Problemovapex nicaraguensis* **sp.n.**

about primary homonymy of Thunberg's name is incorrect, because this name was originally used in combination with *Locusta* (but not with *Gryllus*), and the valid name for *Ph. guttulata* should be *Ph. laurifolia* (Thunberg, 1815). However, no any certainty that the latter name really belongs to this species, and that Thunberg and Stoll considered their names to belong to new species but did not simply identify their specimens as the above-mentioned Linnaean species.

### Subtribe Stilpnochlorina Gorochov, **subtrib.n.**

Type genus: *Stilpnochlora* Stål, 1873; gender feminine.

DIAGNOSIS. Body structure more or less similar to that of Microcentrina (Fig. 417) but with following differences: fore tibia with more diverse structure of tympana (from open to almost completely slit-like; in Microcentrina, from open to partly slit-like); male cercus more or less gradually thinning to apical spinule (often this spinule slightly or strongly bifurcated) and having flattened or slightly concave dorsal area on subapical cercal part (this cercus in Microcentrina usually almost not thinning in apical part and with small apical denticle or spinule, but always without flattened or concave area in subapical part; for comparison see Figs 441, 444, 447, 448 and 451, 454, 457); ovipositor partly reduced (lacking denticles) but with narrow and acute distal portions of lower valves (Figs 463, 464), or it less reduced (with numerous denticles) and with a more angular apical part as well as with distal portions of lower valves weakly curved upwards/ forwards (latter structure of lower valves characteristic of new genus and possibly ancestral for lower valves of *Syntechna* and *Stilpnochlora* having partly reduced ovipositor with narrow, acute and weakly




**Figs 441–457.** Male abdomen: 441 — *Lamprophyllum*? *otomium*; 442–444 — *Acropsis meridiana* **sp.n.**; 445–447 — *Philophyllia ingens magdalenae* **subsp.n.**; 448 — *Ph. guttulata*; 449–451 — *Syntechna longitegminalis* **sp.n.** (holotype); 452–454 — *Problemovapex nicaraguensis* **sp.n.**; 455 — *Apoballa errabunda*; 456 — *Petaloptera zendala*; 457 — *Stilpnochlora jalisco*. Abdominal apex from above (442, 445, 449, 452) and from below (443, 446, 450, 453); male cercus from above (455, 456), and its distal part dorsomedially (441, 444, 447, 448, 451, 454, 457). Designation: *f* — flattened (or even slightly concave) small dorsal area in subapical cercal part.

**Рис. 441–457.** Брюшко самца: 441 — *Lamprophyllum*? *otomium*; 442–444 — *Acropsis meridiana* **sp.n.**; 445–447 — *Philophyllia ingens magdalenae* **subsp.n.**; 448 — *Ph. guttulata*; 449–451 — *Syntechna longitegminalis* **sp.n.** (голотип); 452–454 — *Problemovapex nicaraguensis* **sp.n.**; 455 — *Apoballa errabunda*; 456 — *Petaloptera zendala*; 457 — *Stilpnochlora jalisco*. Вершина брюшка сверху (442, 445, 449, 452) и снизу (443, 446, 450, 453); церк самца сверху (455, 456), и его дистальная часть дорсомедиально (441, 444, 447, 448, 451, 454, 457). Обозначения: *f* — уплощенный (или даже слегка вогнутый) маленький дорсальный участок в субапикальной (околовершинной) части церка.

curved distal portions of these valves; but in Microcentrina, including *Rotundovapex* **subgen.n.**, distal portion of ovipositor lower valves with posteroventral edge strongly or moderately curved upwards/forwards, i.e., ovipositor apex more rounded or truncated; compare Figs 3 and 4 with 461).

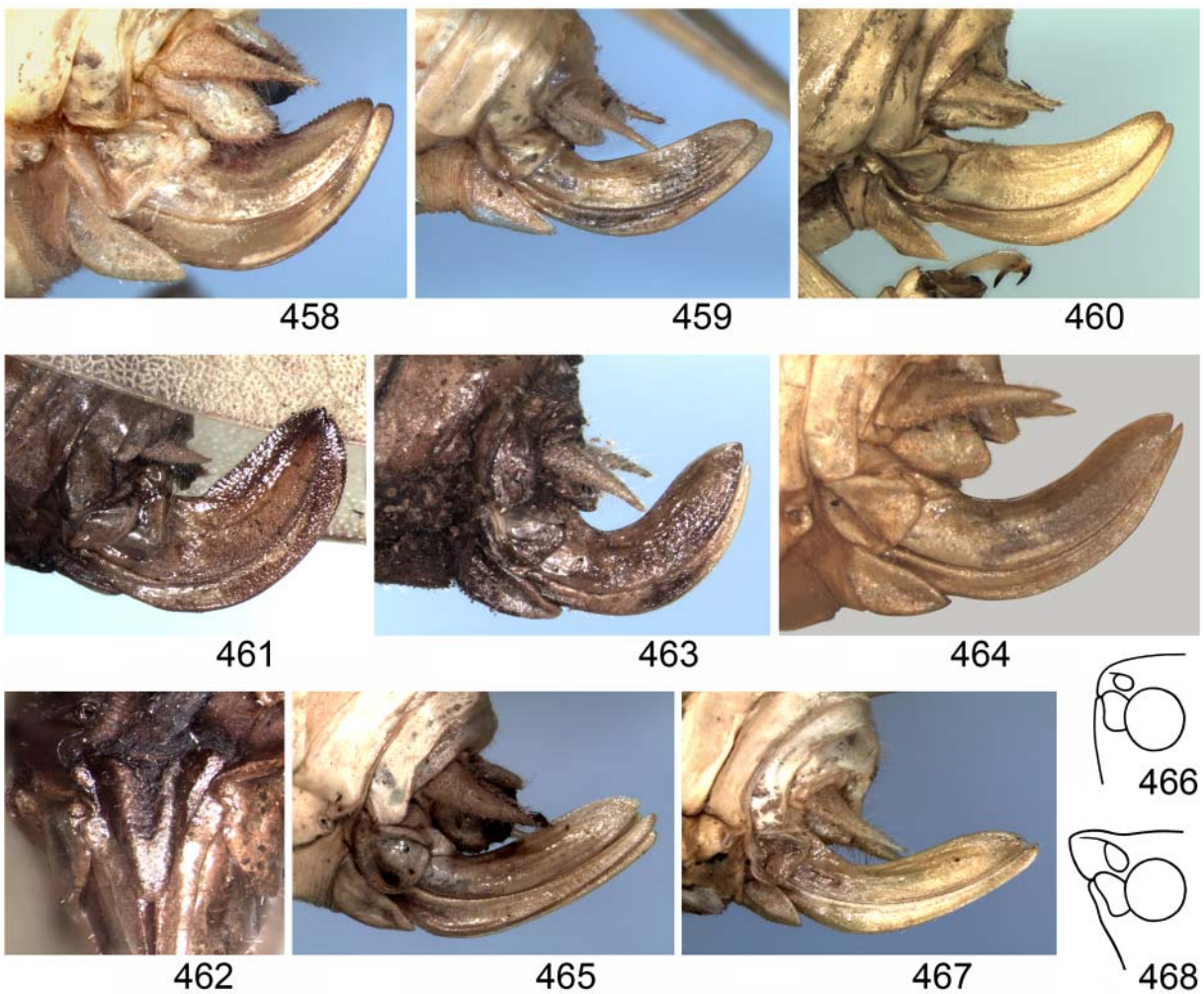
COMPOSITION. Four genera: *Silpnochlora*; *Nicklephyllum* Cadena-Castañeda, 2016; *Syntechna* Brunner-Wattenwyl, 1878; possibly *Problemovapex* **gen.n.**

COMPARISON. This subtribe differs from the nearest subtribe Microcentrina in the above-mentioned characters of the male cerci and ovipositor. From the subtribe Steirodontina (another subtribe of the tribe Steirodontini including now only 4 genera: *Steirodon* Serville, 1831, *Cnemidophyllum* Rehn, 1917, *Emsleyfolium* Cadena-Castañeda et al., 2016 and possibly *Coronophyllum* Mendes et al., 2023), Stilpnochlorina **subtrib.n.** is distinguished by the absence of characteristic processes on the female last abdominal tergites. And from the subtribe Aegimiina (also belonging to Steirodontini), the new subtribe differs in a much shorter lower rostral tubercle and a distinctly shorter ovipositor.

## Genus *Syntechna* Brunner-Wattenwyl, 1878

Type species (in primary binomen): *Syntechna olivaceoviridis* Brunner-Wattenwyl, 1878, by subsequent designation (Rehn, 1905).

NOTE. Now this genus consists of 6 species: type species; *Phylloptera tarasca* Saussure, 1859 (Central America) synonymized with *Syntechna caudelli* Rehn, 1901 from Mexico by Hebard (1924); *S. angulata* Hebard, 1924 (Ecuador); *S. lineata* Cadena-Castañeda, 2014 (Colombia); *S. monzoni* Cadena-Castañeda, 2014 (Guatemala); *S. longitegminalis* **sp.n.** These species are very similar in almost all characters to representa-




**Figs 458–468.** Details of body structure: 458 — *Lamprophyllum*? *otomium*; 459 — *Acropsis tectiformis*; 460 — *Philophyllia guttulata*; 461, 462 — *Problemovapex nicaraguensis* **sp.n.**; 463 — *Syntechna tarasca*; 464 — *Stilpnochlora jalisco*; 465, 466 — *Apoballa errabunda*; 467, 468 — *Petaloptera zendala*. Female abdominal apex from side (458–461, 463–465, 467); female genital plate from below (462); scheme of rostral region of head in profile (466, 468).

**Рис. 458–468.** Детали строения тела: 458 — *Lamprophyllum*? *otomium*; 459 — *Acropsis tectiformis*; 460 — *Philophyllia guttulata*; 461, 462 — *Problemovapex nicaraguensis* **sp.n.**; 463 — *Syntechna tarasca*; 464 — *Stilpnochlora jalisco*; 465, 466 — *Apoballa errabunda*; 467, 468 — *Petaloptera zendala*. Вершина брюшка самки сбоку (458–461, 463–465, 467); генитальная пластинка самки снизу (462); схема ростральной области головы в профиль (466, 468).

tives of the genus *Stilpnochlora*; but they differ from *Stilpnochlora* representatives in only a few insignificant features: in somewhat smaller body; in the presence of characteristic whitish hairs along the anterior, ventral and posterior edges of the pronotal lateral lobes; in the absence of distinct denticles or projections along the pronotal dorsolateral carinae. Thus, *Syntechna* may be closely related to the ancestor of *Stilpnochlora* or even be ancestral taxon for the latter genus.

### *Syntechna longitegminalis* Gorochov, **sp.n.**
Figs 414–416, 423, 432, 433, 439, 449–451.

ETYMOLOGY. This species name consists of the Latin prefix "longi-" (long) and adjective "tegminalis" (tegminal) originating from the Latin morphological term "tegmen" (fore wing in orthopteroid insects).

MATERIAL. *Holotype* male, **Peru**: Junin Department, environs of Calabaza Vill., 11º30.2′ S, 74º48.9′ W, 2111 m, at light, 26.I.2011, V. Sinyaev, A. Poleschuk (ZIN). *Paratype* male, **Ecuador**: eastern part, ~75 km SEE of Quito City, environs of El Chaco Vill. on Rio Quijos, ~1500 m, secondary forest, on leaf of bush at night, 18–22.XI.2005, A. Gorochov, A. Ovtshinnikov (ZIN).

DESCRIPTION. *Male* (holotype). Body medium sized. Coloration uniformly greenish but with yellowish tinge on head, pronotum, pterothorax, fore legs, middle and hind femora, bases of wings and all abdominal structures, as well as with light brown to brown antennal flagellum (except for yellowish base of this flagellum), light brown eyes and pronotal disc, yellowish to whitish costal tegminal edge and most part of R as well as distal half of MA (Figs 414–416, 423), dark brown (almost blackish) longitudinal line on each tympanic membrane, brownish tinge on all sternites, brown apical cercal spinules, and transparent some membranes of right tegminal stridulatory apparatus and majority of membranes in hind wings. Head with distance between antennal cavities almost as great as scape width, with upper rostral tubercle arcuately curved downwards and having barely widened but truncated apical part as well as thin and rather deep dorsomedian groove (but latter groove ending before this apical part), and with lower rostral tubercle more rounded in apical part which barely narrower than this part in previous tubercle and more or less pressed to it (Figs 414, 415); pronotum as in Figs 415 and 416, and its lateral lobe with distinct row of thin whitish hairs along anterior, ventral and posterior edges (other structures of body, that located very near these edges, also with similar hairs); tegmina long and moderately narrow, slightly narrowing to narrowly rounded apical part, without any distinct concavities of costal and anal edges, with RS almost 2.3 times as long as proximal tegminal part before RS base, with anterior RS branch ending at tegminal apex, and with one subapical branch of RA (Fig. 423); tegminal stridulatory apparatus with left stridulatory vein moderately thick and rather long, with nearest vein (located very near this stridulatory vein) poorly distinct, with right mirror visible but rather small (Figs 432, 433), and with ventral teeth of left stridulatory vein rather small and dense (these teeth forming slightly arcuated row from 120–123 large and dark teeth, about 20 medial teeth gradually narrowing to medial top, several very small and light lateral teeth, and a few dark sublateral teeth quickly increasing towards middle of this vein; Fig. 439); hind wings clearly protruding beyond tegminal apices; all tympana oval and almost completely open (barely immersed); abdomen with very short and rounded posteromedian projection on second–fourth abdominal tergites, with widely truncated last tergite, with rather slender and somewhat arcuately curved cercus which in apical part almost gradually narrowing to moderately short apical spinule and having slight dorsal flattening in subapical part of cercus, with epiproct and paraprocts similar to those of Microcentrina, and with genital plate gradually narrowing to apical part having shallow posteromedian notch and very short styles (Figs 449–451).

*Variation*. Male paratype uniformly yellowish (greenish in living condition) with light brown most part of antennal flagellum, and with coloration of tympanic and wing membranes as in holotype; its left stridulatory vein barely thicker than in holotype, its nearest vein somewhat more distinct, and its genital plate with insignificantly deeper posteromedian notch.

*Female* unknown.

*Length* in mm. Body 22–25; body with wings 59–61; pronotum 6.5–7.2; tegmina 46–47; hind femora 24–25.

COMPARISON. The new species is distinguished from *S. tarasca* by longer tegmina with less narrowing distal parts and without any slight concavity on each costal edge behind the widest tegminal part, by the absence of a distinct or slightly distinct darkened stripe on the basal part of M-Cu area (near stridulatory apparatus) in the male tegmen (compare Figs 423 and 424) and of darkened parts around tympana in the fore tibia (however, the latter darkened parts may be undeveloped in some specimens of *S. tarasca*, but each tympanic membrane in the both species is with a dark logitudinal stripe).

Differences of the new species from *S. olivaceoviridis* may be understandable only after its lectotype designation, because the syntypes of this species (judging by their photographs in OSF) probably belong to three different species or subspecies: the male and female from Ecuador are very similar to each other and evidently belong to the same species; the females from Colombia have their tegmina somewhat longer (narrower) and with a narrower costal area (near RS base, this area is clearly narrower than the area between this base and the anal tegminal edge, but in Ecuadorian specimens, these areas are approximately equal in width); moreover, the latter females are also not identical, because the female from "State of Bogota" has the area between RA and the anal tegminal edge clearly narrower than in the other Colombian syntype. In this connection, I here designate the male syntype from Ecuador as the lectotype of *S. olivaceoviridis* which is deposited in "Museo Nacional de Ciencias Naturales" (Madrid) and distinguished from *S. longitegminalis* **sp.n.** by clearly shorter (wider) tegmina, a distinctly longer and more arcuate left stridulatory vein, and a more developed nearest vein (the latter vein is located very near the left stridulatory vein, and in the new species, this nearest vein is strongly reduced). It is also useful to note that in OSF, there are the photographs of some additional specimens (not syntypes) with unknown geographic data which are determined as *S. olivaceoviridis* but have a distinctly or significantly shorter left stridulatory vein (than in the above-mentioned lectotype) and now belong to other congeners; the photograph of one of these specimens was assigned to *S. olivaceoviridis* in the publication by Cadena-Castañeda [2014: fig. 47], but this should now be considered a misidentification.

From *S. angulata*, the new species differs in the same characters of the tegminal shape as from *S. olivaceoviridis*, and in tegminal RS which almost 2.3 times as long as the proximal tegminal part before RS base (*vs* this ratio is 1.5–1.7); from *S. lineata*, in a larger body, the ansence of dark marks on the tegmina near the stridulatory apparatus (these marks in *S. lineata* male are probably similar to those in many of *S. tarasca* males), a uniformly greenish (not darkened) tympanal area of the fore tibia, more slender male cerci, and significantly shorter styles of the male genital plate; and from *S. monzoni*, in a distinctly lighter head dorsum (*vs* it is darkened), the absence of a dark line (narrow stripe) along the basal part of the costal

tegminal edge, more slender male cerci, a less deep posteromedian notch of the male genital plate and distinctly shorter styles of this plate.

## Genus *Problemovapex* Gorochov, **gen.n.**

Type species: *Problemovapex nicaraguensis* **sp.n.**

ETYMOLOGY. This generic name consists of the following Latin words and their parts: "problematic" (problematical), the morphological term "ovipositor", and "apex" (top). This name is given due to a problematic position of this genus that is connected with its ovipositor apex structure.

DIAGNOSIS. Head and pronotum typical of Microcentrina, but distance between antennal cavities insignificantly greater than scape width (Fig. 411), and pronotum with concave anterior and convex posterior edges of disc as well as with lateral lobes rounded in ventral part and having thin whitish hairs along anterior, posterior and ventral edges (Figs 412, 413); wings well developed and with normal (for this subtribe) shape and venation, but tegmina with anterior branch of RS ending on anal edge before tegminal apex (Fig. 425), and with stridulatory apparatus of male lacking distinct mirror in left tegmen as well as having well developed large mirror in right tegmen (Figs 434, 435); legs also as in Microcentrina, but with both tympana open and oval, and with a few small but rather strong spines along inner ventral edge of fore femur as well as along outer ventral edges of middle and hind femora; abdomen without distinct posteromedian projections on tergites and with structures of abdominal apex more or less similar to those of *Syntechna* (including distal portion of male cercus which gradually narrowing to apical spinule and having flattened dorsal area in subapical part; Figs 452–454), but ovipositor different, because it less reduced, with distinct denticles along most part of dorsal edge and along distal portion of posteroventral edge, with the latter portion (formed by lower valves) less strongly curved than even in *Rotundovapex* **subgen.n.**, and with apical parts of lower valves somewhat more acute-angled than in this subgenus (Fig. 461).

INCLUDED SPECIES. Type species only.

COMPARISON. This new genus differs from all other genera of Stilpnochlorina **subtrib.n.** in the tegmina with the anterior branch of RS ending clearly before the tegminal apex, and in a less reduced ovipositor having numerous denticles on its dorsal and posteroventral edges. From all genera of Microcentrina, the new genus is distinguished by the following combination of characters: by the male cercus with its distal portion gradually thinning to the apical spinule and having a flattened dorsal area in the subapical part, by a more angular apical part of the ovipositor (the posteroventral edge of the distal portion of the lower valve is less strongly curved than in less reduced ovipositors of Microcentrina; compare Figs 3 and 4 with 461).

### *Problemovapex nicaraguensis* Gorochov, **sp.n.** Figs 411–413, 425, 434, 435, 440, 452–454, 461, 462.

ETYMOLOGY. This species is named after the country Nicaragua where it was collected.

MATERIAL. *Holotype* male, **Nicaragua**: "Dam Site", 3–13.XII.1986, L. Medvedev (ZIN). *Paratype* female, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance as in majority of representatives of *Syntechna* and *Microcentrum* s. l., but with characteristic coloration and some details of body structure: coloration yellowish with greenish tinge on tegmina and apical parts of hind wings, as well as with light brown proximal part of antennal flagellum, greyish brown middle part of this flagellum (its distal part missing) (Figs 411–413), blackish ventral spines on all femora, brownish spots on tegmina (one spot on basal part of left dorsal field, including stridulatory vein, somewhat larger and almost brown; but rather numerous spots on both lateral fields somewhat smaller and lighter), brown to dark brown stripe along anal tegminal edge (this stripe running from distal part of dorsal field and distinctly narrowing in more distal portion; Fig. 425, 434), transparent some membranes in stridulatory apparatus of right tegmen and majority of membranes in hind wings, and brown to blackish apical spinule of cercus (Figs 435, 452–454); head with upper rostral tubercle barely bilobed at apex and having slight but distinct longitudinal median concavity on dorsum, with lower rostral tubercle having rounded apical part which slightly narrower than this part in previous tubercle, and with moderately large ocelli (Fig. 411); pronotum as in Figs 412, 413; tegmina rather long and moderately narrow, elongately oval (Fig. 425), with stridulatory apparatus as in Figs 434 and 435, and with left stridulatory vein ventrally somewhat arcuated and having several very small lateral teeth, a few sublateral teeth quickly increasing towards middle of this vein, and about 50 teeth gradually decreasing from largest of sublateral tooth to several very small medial teeth (Fig. 440); cerci rather short and moderately thick, somewhat curved medially (Fig. 452), and with distal parts as in Fig. 454; genital plate almost oval, with a pair of very short apical styles and very shallow but wide notch between them (Fig. 453).

*Female*. Coloration and structure of body similar to those of male, however: antennal flagellum lighter (from yellowish to light brown, but distal part of this flagellum also missing); pronotal disc with a pair of reddish spots near anterior edge; ventral spines of femora dark brown; dorsal fields of tegmina almost uniformly yellowish; structure of these fields and of abdominal apex similar to that of females in Microcentrina and in other genera of Stilpnochlorina **subtrib.n.**, except for genital plate (Fig. 462) and ovipositor (this plate elongately triangular, with rather wide longitudinal ventromedian groove in proximal two thirds, with rather narrow posteromedian part having narrowly rounded apex, and with a pair of distinct longitudinal concavities in lateral parts; ovipositor as in Fig. 461).

*Length* in mm. Body: male 21, female 24; body with wings: male 43, female 44; pronotum: male 5.5, female 5.7; tegmina: male 34, female 34.5; hind femora: male 16.5, female 17; ovipositor 5.8.

COMPARISON. Differences of this species (the only one in this genus) from all other similar taxa are given above, under the description of this genus.

## *Petaloptera* generic group with unclear subribal position

NOTE. This group includes 2 related genera usually considered as members of the former tribe Microcentrini: *Apoballa* Brunner-Wattemwyl, 1878 and *Petaloptera* Saussure, 1859. They are clearly related to each other and forming a distinct group inside the tribe Steirodontini, because they have a characteristic upper rostral tubercle with its middle part distinctly (*Apoballa*) or strongly (*Petaloptera*) projecting upwards/forwards and having a pair of oblique lateral folds (the anterior surface of the distal part of this tubercle is directed almost vertically downwards in *Apoballa* and slightly downwards/backwards in *Petaloptera*, but this projecting part is much more inflated in the latter genus, and the aforementioned oblique folds are insignificant in *Apoballa* and significantly developed in *Petaloptera*; Figs 418, 419, 466, 468). Moreover, the stridulatory apparatus in the left tegmen of *A. errabunda* Brunner-Wattenwyl, 1878

(the only species of *Apoballa*) has a characteristic large whitish spot with a darkened ring around it, and a very similar spot is developed in one species of *Petaloptera*, determined by Cadena-Castañeda [2015] as *P. filia* Brunner-Wattenwyl, 1878 (but Cadena-Castañeda's specimen has a slightly bilobed apex of the upper rostral tubercle projection, although the holotype of *P. filia* is with this projection longer and narrowly rounded at the apex; see photos in OSF). The ovipositors of these genera are partly reduced (lacking denticles) and almost identical (Figs 465, 467), and the distal parts of the ovipositor lower valves are narrowly rounded; thus, it is unclear which kind of a denticulated ovipositor may be ancestral for them: such as in *Microcentrum* s.l., or such as in *Problemovapex* **gen.n.** The structure of the male cerci also cannot give us any reliable evidence, since *Petaloptera* has the male cercus somewhat similar to that of *Philophyllia guttulata* (i.e., almost intermediate between those of *Microcentrina* and *Stilpnochlorina* **subtrib.n.**; Figs 448, 456), and the male cercus of *Apoballa* is distinctly modified (Fig. 455).

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