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SYSTEMATICS OF THE AMERICAN KATYDIDS (ORTHOPTERA: TETTIGONIIDAE). COMMUNICATION 3

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ABSTRACT

New data on Phaneropterinae from Ecuador, French Guiana, Peru and Bolivia are given. *Vellea pulchra* sp. nov., *Euceraia umbrosa* sp. nov., *E. subaquila colorata* subsp. nov., *E. cercata* sp. nov., *E. cercata elchaco* subsp. nov., *E. convoluta* sp. nov., *E. proxima* sp. nov., *E. abnormalis parallela* subsp. nov., *E. varia* sp. nov., *E. varia simulata* subsp. nov., *E. gusarovi* sp. nov., *Pycnopalpa porphyretica* sp. nov., *P. occidentalis* sp. nov., *P. gracilenta* sp. nov., *Hetaira angusta* sp. nov. and *H. morona* sp. nov. are described. New subgenera of the genus *Pycnopalpa* Audinet-Serville, 1838 (*Vitrosoria* subgen. nov. and *Gracisoria* subgen. nov.) are established. *Euceraia sanguinea* Piza, 1950, sp. dist. and *Zenirella* Piza, 1973, gen. dist. are restored from synonymy. *Zenirella punctata* (Brunner-Wattenwyl, 1878), comb. nov. and *H. aurigera* (Rehn, 1918), comb. nov. are transferred from the genera *Ligocatinus* Rehn, 1901 and *Topana* Walker, 1869 to *Zenirella* and *Hetaira* Brunner-Wattenwyl, 1891, respectively. Two former genera are included in the genera *Hetaira* and *Gnathoclita* Hagenbach, 1841 (Pleminiinae) as their subgenera *Atopana* Vignon, 1930, stat. nov. and *Disceratus* Scudder, 1869, stat. nov. (= *Tettohenicus* Gorochov, 2012, syn. nov.), respectively. Some new data on species distribution are given.

Key words: America, *Euceraia, Gnathoclita, Hetaira,* new taxa, Orthoptera, Phaneropterinae, Pleminiinae, *Pycnopalpa,* Tettigoniidae, *Vellea, Zenirella*

СИСТЕМАТИКА АМЕРИКАНСКИХ КУЗНЕЧИКОВ (ORTHOPTERA: TETTIGONIIDAE). СООБЩЕНИЕ 3

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РЕЗЮМЕ

Приведены новые данные по Phaneropterinae из Эквадора, Французской Гвианы, Перу и Боливии. Описаны следующие таксоны: *Vellea pulchra* sp. nov., *Euceraia umbrosa* sp. nov., *E. subaquila colorata* subsp. nov., *E. cercata* sp. nov., *E. cercata elchaco* subsp. nov., *E. convoluta* sp. nov., *E. proxima* sp. nov., *E. abnormalis parallela* subsp. nov., *E. varia* sp. nov., *E. varia simulata* subsp. nov., *E. gusarovi* sp. nov., *Pycnopalpa porphyretica* sp. nov., *P. occidentalis* sp. nov., *P. gracilenta* sp. nov., *Hetaira angusta* sp. nov. и *H. morona* sp. nov. Установлены новые подроды рода *Pycnopalpa* Audinet-Serville, 1838 (*Vitrosoria* subgen. nov. и *Gracisoria* subgen. nov.). *Euceraia sanguinea* Piza, 1950, sp. dist. и *Zenirella* Piza, 1973, gen. dist. восстановлены из синонимов. *Zenirella punctata* (Brunner-Wattenwyl, 1878), comb. nov. и *H. aurigera* (Rehn, 1918), comb. nov. перенесены из родов *Ligocatinus* Rehn, 1901 и *Topana* Walker, 1869 в *Zenirella* и *Hetaira* Brunner-Wattenwyl, 1891 соответственно. Два бывших рода включены в роды *Hetaira* и *Gnathoclita* Hagenbach, 1841 (Pleminiinae) как их подроды: *Atopana* Vignon,1930, stat. nov. и *Disceratus* Scudder, 1869, stat. nov. (= *Tettohenicus* Gorochov, 2012, syn. nov.) соответственно. Даны некоторые новые сведения по распространению видов.

Ключевые слова: Америка, *Euceraia, Gnathoclita, Hetaira,* новые таксоны, Orthoptera, Phaneropterinae, Pleminiinae, *Pycnopalpa,* Tettigoniidae, *Vellea, Zenirella*

INTRODUCTION

This paper is a third communication in the series of publications on the American Tettigoniidae. The previous communications of this series (Gorochov 2012a, b) contain mainly descriptions of new taxa from the subfamilies Pleminiinae (genera *Championica* Saussure et Pictet, 1898 and *Gnathoclita* Hagenbach, 1841), Phaneropterinae (genera *Machimoides* Rehn, 1950, *Lichenomorphus* Cadena-Castañeda, 2011 and *Dysonia* White, 1862) and Meconematinae (genera *Arachnoscelis* Karny, 1911, *Phlugis* Stål, 1861, *Odontophlugis* Gorochov, 1998, *Phlugiola* Karny, 1907, *Neophlugis* Gorochov, 2012 and *Cephalophlugis* Gorochov, 1998). Some other results of this study were published in additional papers: Gorochov 2006 (Hexacentrinae: *Ecuaneduba* Gorochov, 2006); Cadena-Castañeda and Gorochov in Cadena-Castañeda 2013 (Phaneropterinae: *Markia* White, 1862); Cadena-Castañeda and Gorochov 2012 (Phaneropterinae: *Paraphidnia* Giglio-Tos, 1898); Gorochov, 2013b (*Arachnoscelis*). Here, new data on taxonomy and distribution of some taxa of Phaneropterinae and Pleminiinae as well as keys for subgenera of two genera are given.

MATERIAL AND METHODS

Most part of the specimens studied was collected in tropical forests at light, but some specimens were collected during night work with a flash-lamp on leaves of trees and bushes. This material (including types) is deposited at the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg. The specimens are dry and pinned. The photographs of wings of some large insects were made by Canon 40D, and all the other photographs were made by Leica M216.

SYSTEMATICS

Subfamily Phaneropterinae Burmeister, 1838

Note. The genera considered here are included in "genus group Plagiopleurae" and "genus group Turpiliae" in the internet catalogue of Orthoptera (Eades et al. 2013). A single genus (*Vellea* Walker, 1869) was included in this catalogue as a genus with unknown position among Phaneropterinae. However, this genus is clearly similar (probably related) to the genera *Ceraia* Brunner-Wattenwyl, 1891 and *Euceraia* Hebard, 1927 from Plagiopleurae in all the morphological characters including general appearance (Fig. 1), shape and venation of wings (Figs 2–4, 20–25), structure of male stridulatory and copulatory devices (Figs 42–44, 50, 51, 55, 56, 58–60, 69–93, 95–144), and shape of ovipositor (Figs 64–66, 198). The latter feature is especially interesting, as it often allows one to clarify relationship between genera in some other subfamilies of Ensifera (Gorochov 2011, 2013a). Moreover, judging by ovipositor, *Vellea*, *Ceraia* and *Euceraia* are dissimilar to some other genera of Plagiopleurae (*Estemma* Brunner-Wattenwyl, 1878; *Godmanella* Saussure et Pictet, 1897; *Homotoicha* Brunner-Wattenwyl, 1891 and possibly *Ligocatinus* Rehn, 1901) and may be not related to them. But a similar ovipositor is presented in some species of the genus *Scudderia* Stål, 1873 ("genus group Scudderiae" of the same catalogue: Eades et al. 2013) having also the male copulatory device more or less similar to that of *Ceraia*!

The genera *Pycnopalpa* Audinet-Serville, 1838 and *Hetaira* Brunner-Wattenwyl, 1891 are close related to each other, because they have the similar structure of both pronotum (Figs 5–19, 34, 36, 37) and male epiproct (Figs 168, 170, 174, 180, 187), but their relationship with all the other genera of Turpiliae is not evident (excepting maybe the genus *Topana* Walker, 1869 having fore femora, male genital plate and ovipositor more or less similar to those of *Pycnopalpa* and *Hetaira*; Figs 67, 68, 172, 176, 182, 185, 189, 199). Thus, division of the American Phaneropterinae into tribes, subtribes and generic groups is not very clear, and it is a reason that in this communication, I cannot use taxa of intermediate rank between subfamily and genus.

Genus *Vellea* Walker, 1869

Type species: *Vellea rosea* Walker, 1869 (=? *Phaneroptera cruenta* Burmeister, 1838), by monotypy.

Note. This genus was established for only *V. rosea* described from Para in Brazil and Demerara in Guyana (Walker 1869). Kirby (1906) included *Phaneroptera cruenta* Burmeister, 1838 from another Brazilian locality (Rio de Janeiro) in this genus and synonymized *V. rosea* with the latter species name. This synonymy is supported by the recent authors (Eades et al. 2013). Later, a second species of *Vellea* (*V. mexicana* Marquez, 1958) was described from

Mexico. Here, a new (third) species of this genus is described from Ecuador.

All these species are close related, and their coloration and structure of body (including sexual structures of abdomen) are very similar to those described below for *V. pulchra* sp. nov. but with somewhat more diverse coloration of head, pronotum, tegmina and hind wings (however, general coloration of body greenish with light green most part of tegmina, red proximal half of hind wings, mainly yellowish lateral pronotal lobes, and brownish or brownish rose abdomen; Figs 1, 2, 20–25) as well as shape of fore femora (Figs 40, 41, 48, 49), structure of both stridulatory vein and tegminal MA (Figs 56, 57, 59–63), and shape of apical part of male genital plate (Figs 43, 44, 50, 51). Female genital plate is also more or less similar in all the species studied (rather small and approximately triangular; Figs 52–54); and ovipositor is rather long, moderately curved, and with widely rounded apex having very small denticles on the upper and lower valves (Fig. 64).

Vellea pulchra sp. nov.
(Figs 1, 39–46, 55–57)

Etymology. The species name is the Latin word "pulchra" (nice).

Type material. Holotype – male, ECUADOR: Pinchincha Prov., Rio Pachijal, Los Bancos, 0°4´6´´N, 78°54´17´´W, 928 m, 29 October 2011, V. Sinyaev, O. Romanov coll.

Paratypes: 5 males, same data as for holotype.

Description. *Male* (holotype). Colouration yellowish with greenish tinge and with following pattern: pronotal disc and most part of tegmina light green; each lateral lobe of pronotum with two dark brown marks (Fig. 39); both pairs of wings with brown apical area; tegmina also with a few small brown spots in interradial area, brownish green stridulatory vein of left tegmen, and transparent some membranes of stridulatory apparatus; hind wings transparent with red (but having crimson tinge) proximal half as well as with yellowish both stripe along distal edge of this half and spot near apical part of these wings (Fig. 1); tympanal region of fore tibiae grayish brown with almost dark brown tympanal membranes; dorsal surface of hind femora also grayish brown but with two light brown areas (apical area, and area somewhat more distal than middle of femur); most part of spines of these femora and areas on all tarsi dark grayish brown; rest of tarsi, large area on dorsal half of middle femora and numerous small spots on hind tibiae light brown; hind part of thorax and complete abdomen brownish rose (but metathorax with rather large whitish spot and narrow brown mark on each pleurite). Structure of body typical of this genus: head rostrum with small lower tubercle and distinctly larger (but not very large) dorsal tubercle; latter tubercle laterally compressed, with small and roundly projected (almost denticle-like) apical part and moderately high hind part (latter part rounded in profile and separated from apical part by distinct notch; Fig. 39); dorsal surface of this tubercle with slight and narrow median groove; pronotal disc moderately elongate, somewhat widened posteriorly, and with almost straight anterior edge and roundly convex posterior edge; lateral lobes of pronotum as in Fig. 39; tegmina moderately wide and slightly curved, with MA partly fused with posterior (medial) branch of RS (Figs 1, 57), with long stridulatory vein of left tegmen, and with other structures of stridulatory apparatus as in Figs 55, 56; hind wings clearly longer than tegmina, with tegmen-like structure of apical part of costal lobe (Fig. 1); fore femora with not high outer dorsal keel, low inner ventral keel, and high outer ventral keel (latter keel especially high in distal half; Figs 40, 41); fore tibiae with strongly widened tympanal region, opened outer tympanum having insignificantly immersed ventral part of tympanal membrane, and semi-opened inner tympanum having this part of tympanal membrane significantly immersed under narrow sclerotized fold (Figs 40, 41); middle legs thin but with hardly widened subbasal part of tibia; hind femora also rather thin and with two pairs of very small apical spinules and seven pairs of ventral flattened spines (distal spines larger and more widened than proximal ones, and two pairs of most distal spines lobe-like and with bases fused with each other on each side); and hind tibiae with rather numerous small spines fused with both dorsal keels of these tibiae (other spines on all tibiae also small but less numerous and more or less articulated with tibiae); last abdominal tergite with wide, short and widely truncate dorsal projection; this projection slightly concave at apex and with a pair of small posterolateral lobules covered with short hairs; cerci rather simple, conical and with hook at apex (Fig. 42); genital plate elongate and moderately narrow (but with wider basal part), with moderately deep and rounded posteromedian notch, and with rather

narrow posterolateral projections having very small styles on their apices (Fig. 43); genitalia membranous with a pair of small and curved semisclerotized structures situated near each other and covered with very small denticles (Figs 45, 46).

Variations. Tegmina sometimes with small brown additional spots in some areas situated around interradial area. One male with aberrant venation: base of anterior branch of RS transferred to RA in left tegmen (traces of this translocation distinct also in left hind wing), and MA not fused with posterior branch of RS in both tegmina.

Female. Unknown.

Length (mm). Body 18–23; body with wings 46–50; pronotum 5.4–5.9; tegmina 35–38; hind femora 23–25.

Comparison. The new species is clearly distinguished from all the other congeners by the wings with large brown apical spots (*vs.* tegmina and hind wings with the apical part light green, lacking darker spots; for comparison see Figs 1, 2, 20–25), and fore femora with distinctly higher distal part of outer ventral keel (see Figs 40, 41 and 48, 49). From *V. mexicana*, the new species additionally differs in the presence of more distinct and darker small spots on the rest of tegmina, longer stridulatory vein of the left tegmen (see Figs 55, 56 and 58–60), and tegminal MA and posterior branch of RS often fused with each other for a short distance (see Figs 57 and 61); and from *V. cruenta*, in the pronotal disc not clearly darker than pronotal lateral lobes, and red part of hind wings with a crimson tinge (see Figs 1 and 23).

Remark. Possibly, this new species was recorded as *V. cruenta* from Panama (Nickle 1992: fig. 13). The *Vellea* species illustrated in this paper has the apical part of tegmina darkened, more or less similar to that of *V. pulchra* and dissimilar to that of *V. cruenta* (see Figs 1 and 22).

Vellea mexicana Marquez, 1958
(Figs 2, 20, 21, 47–53, 58–61)

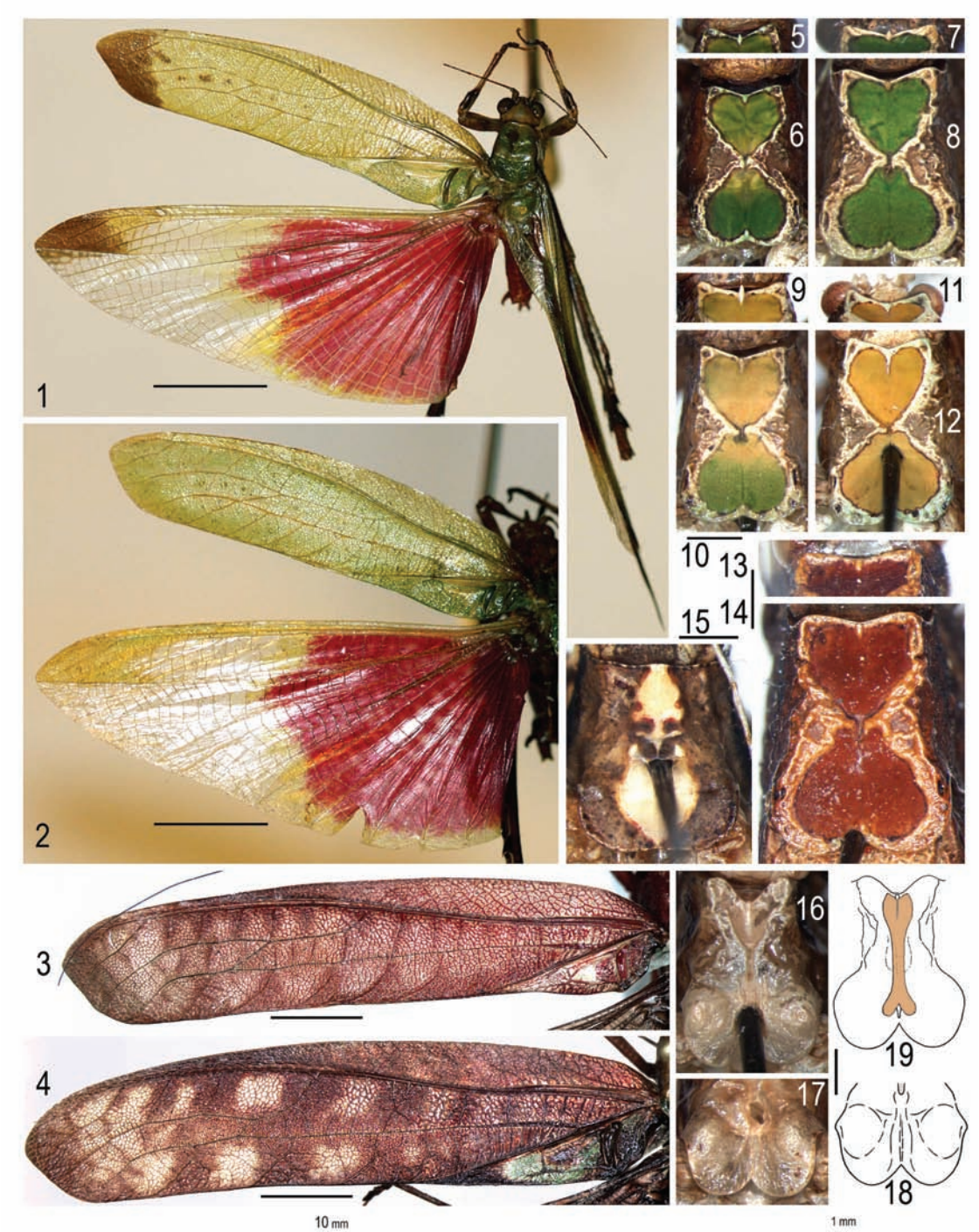
Material studied. MEXICO: 1 male and 1 female, Veracruz State, 15–20 km NE of Catemaco Town, Los Tuxtlas (biostation of Mexico University) in 2 km from Mexican Gulf, rainforest on hills, at light, 6–17 November 2006, A. Gorochov, A. Ovtshinnikov coll. PERU: 4 males and 1 female, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 17 males and 5 females, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 4 males, Ucayali Department, "11 km on 230° from Puerto Bermudes", 10°29.9′S, 75°3.1′W, 713 m, 10–12 March 2011, V. Sinyaev, A. Poleschuk coll.; 2 males, Cusco Department, 7 km NE of Mandor, 13°18.7′S, 70°49.5′W, 890 m, 1–3 December 2010, V. Sinyaev, S. Sinyaeva, Yu. Bezverkhov coll.; 1 male, Madre de Dios Department, Salvatacion, Rio Alto de Madre de Dios, Manu Park, 500 m, September–October 1997, P. Marx coll. ECUADOR: 1 female, eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying forest, on leaf of bush at night, 2–9 November 2005, A. Gorochov, A. Ovtshinnikov coll. FRENCH GUIANA: 2 males, "Guyane Fr., 22 km NW Régina, pk 79 Route Nle 2", 4°25′N, 52°19′W, 100 m, 28 June 1995, V. Gusarov coll.

Note. These Mexican and Peruvian specimens are practically identical in all the main taxonomic characters and correspond to the original description of this species (Marquez 1958). Male of *V. mexicana* is similar to that of *V. pulchra* in the general colouration and structure of body, but it is distinguished from the latter by the characters listed above, in the paragraph "Comparison" after the description of *V. pulchra* (it is necessary to indicate that tegminal MA is not fused with the posterior branch of RS in majority of *V. mexicana* specimens studied here: there are only a few specimens with these veins partly fused with each other). Differences of *V. mexicana* from *V. cruenta* are listed below.

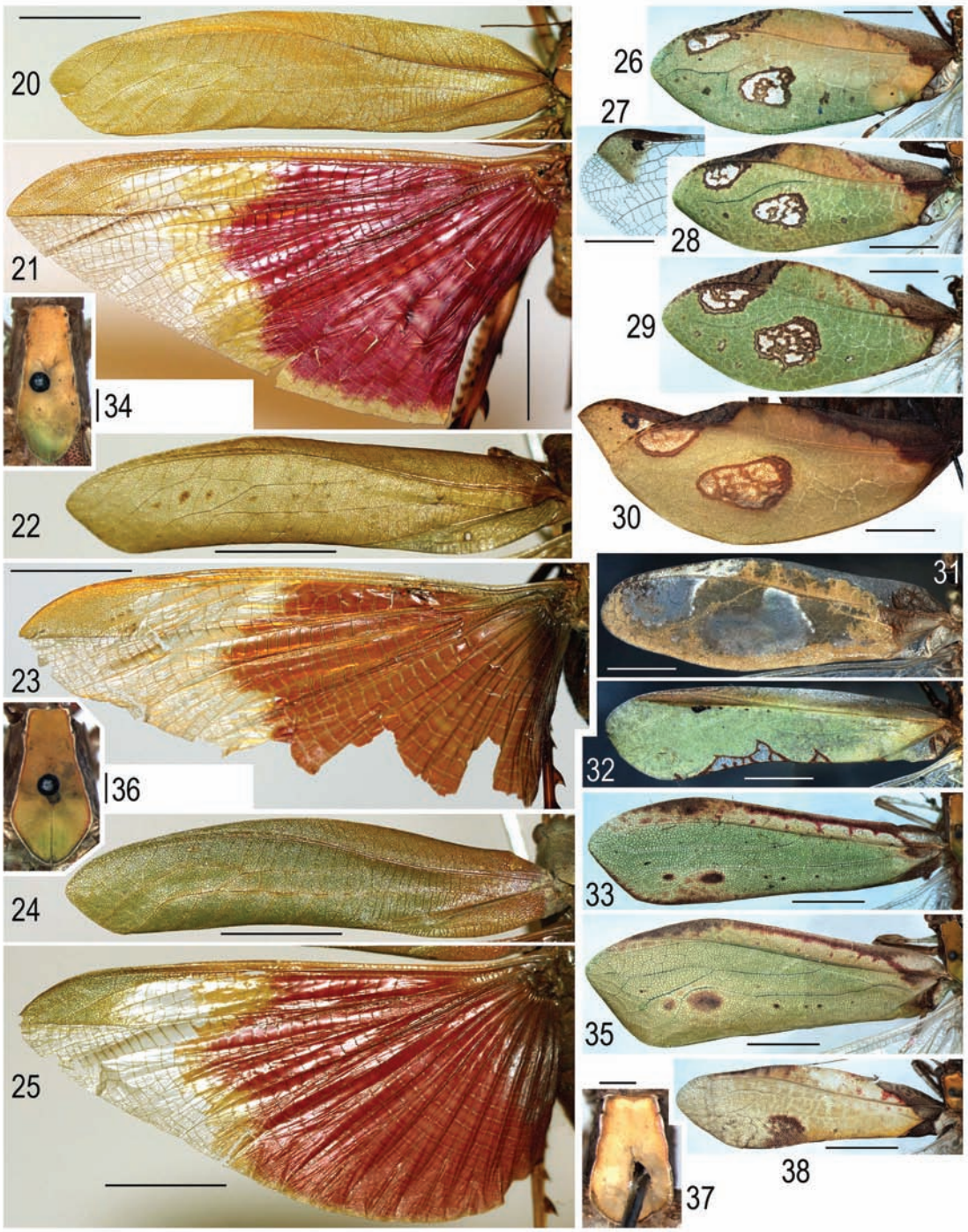
Vellea cruenta (Burmeister, 1838)
(Figs 22, 23)

Material studied. BRAZIL: 1 female, "Bras., R. Jan. [Rio de Janeiro? – A.G.]".

Note. This female is very similar to the photographs of a syntype (female) and possible syntype (male) of this species published in Internet (Eades at al. 2013). Probably, this female is from the same type locality (Rio de Janeiro) as the above-mentioned syntypes. This female is distinguished from *V. pulchra*



Figs 1–19. Phaneropterinae: 1 – *Vellea pulchra* sp. nov.; 2 – *V. mexicana* Marquez; 3 – *Euceraia umbrosa* sp. nov.; 4 – *E. subaquila subaquila* Grant; 5–12 – *Pycnopalpa ?bicordata* (S.-Farg. et A.-Serv.), subsp. 1 (5, 6, male; 7, 8, female), subsp. 2 (9, 10, male) and subsp. 3 (11, 12, male); 13, 14 – *P. porphyretica* sp. nov., female; 15 – *P. gracilenta* sp. nov., male; 16–18 – *P. occidentalis* sp. nov., male; 19 – *P. angusticordata* Vignon. Male from above, left wings spread (1); left wings (2) and left tegmen (3, 4), male; anterior part of pronotal disc from behind and slightly above (5, 7, 9, 11, 13); pronotal disc (6, 8, 10, 12, 14–16, 19) and its posterior part (17, 18) from above. Scale bars: 10 mm for Figs 1–4; 1 mm for Figs 5–18. [19 – after Vignon 1931].



Figs 20–38. Phaneropterinae: 20, 21 – *Vellea mexicana* Marquez; 22–25 – *V. ?cruenta* (Burm.), ?Rio de Janeiro (22, 23), locality unknown (24, 25); 26–29 – *Pycnopalpa ?bicordata* (S.-Farg. et A.-Serv.), subsp. 3 (26, male), subsp. 1 (27, 28, male; 29, female); 30 – *P. porphyretica* sp. nov.; 31 – *P. occidentalis* sp. nov.; 32 – *P. gracilenta* sp. nov.; 33, 34 – *Hetaira angusta* sp. nov.; 35, 36 – *H. ?smaragdina* Br.-W.; 37, 38 – *H. morona* sp. nov. Left female tegmen (20, 22, 24, 26, 28, 29, 31–33, 35, 38); left female hind wing (21, 23, 25); distal part of left male hind wing (27); left tegmen with hind wing of female in rest position (30); pronotal disc from above (34, 36, 37). Scale bars: 10 mm for Figs 20–25; 5 mm for Figs 26–33, 35, 38; 1 mm for Figs 34, 36, 37.

by the characters listed in the paragraph "Comparison" after the latter species description, and from *V. mexicana* by the following insignificant characters: most part of head dorsum and complete disc of pronotum are greenish grey, i. e. distinctly but not strongly darker than the yellowish most part of head and pronotum (*vs.* not darker or almost not darker); red part of hind wings is with a slight brownish tinge (*vs.* with a distinct crimson tinge; for comparison see Figs 2, 21, 23). Genital plate of this female is not preserved.

I studied also an additional female without geographic data. It differs from the above-mentioned Brazilian female in the red part of hind wings slightly larger, yellow band along distal edge of this part somewhat darker (see Figs 23 and 25), and tegminal M partly fused with posterior branch of RS (*vs.* these veins are not fused with each other; see Figs 22, 24, 62, 63). This additional female is very similar to the photograph of holotype (female) of *V. rosea* in the colouration of hind wings (other characters are not distinctly visible in this photograph – Eades et al., 2013). Genital plate of this additional female is with a distinct notch at the apex (Fig. 54); however in female of *V. cruenta* (judging by one of the above-mentioned photographs of its syntypes), it is with more or less narrowly rounded apex, and in my females of *V. mexicana*, this plate slightly varied (Figs 52, 53). Thus, taxonomic status of *V. cruenta*, *V. mexicana* and *V. rosea* is in need of examination on the base of more representative material.

Genus *Euceraia* Hebard, 1927

Type species: *Euceraia insignis* Hebard, 1927, by original designation.

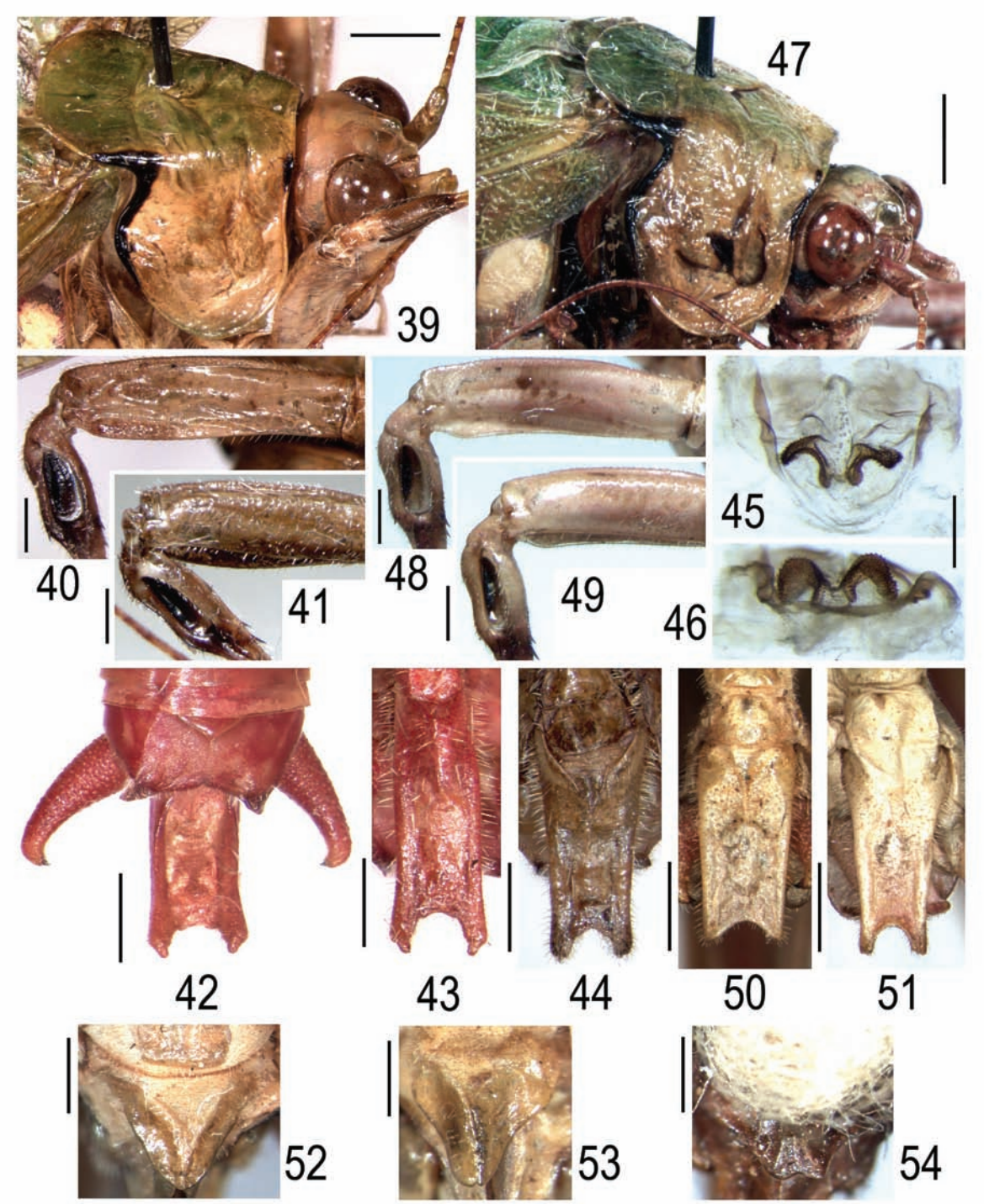
Note. This genus is similar to *Vellea* in the general appearance but with some differences: body coloration is somewhat more diverse but without any red area in the hind wings; both (inner and outer) tympana are opened; hind femora are with simple, small spines only (no large and flat, lobe-like spines in distal half of these femora); posterodorsal projection of last abdominal tergite in male is also wide and not long, but it is often divided into a pair of distinct lobes and always provided with a pair of articulated hook-like or cerciform spines (these spines and small posterolateral lobules of *Vellea* are possibly homologous); male cerci are arcuate or almost angularly curved, usually simple in the shape but always with bifurcate apex (this apex consists of a small dorsolateral hook and a small or very small ventromedial lobule); male genitalia are membranous.

The genus includes 17 species: ten ones mentioned in the electronic catalogue (Eades et al. 2013) as valid species, excepting *Zenirella acreana* Piza, 1973 and its synonym; one species considered in this catalogue as a synonym of another species (see below); and six new species described here.

Euceraia sanguinea Piza, 1950, sp. dist.

Material studied. PERU: 15 males and 2 females, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 1 male, same department and province, environs of Satipo Town, ~800 m, secondary forest near waterfall, at light, 4–5 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 5 males and 6 females, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 3 males, Ucayali Department, "11 km on 230° from Puerto Bermudes", 10°29.9′S, 75°3.1′W, 713 m, 10–12 March 2011, V. Sinyaev, A. Poleschuk coll.; 1 male, Cusco Department, 7 km NE of Mandor, 13°18.7′S, 70°49.5′W, 890 m, 1–3 December 2010, V. Sinyaev, S. Sinyaeva, Yu. Bezverkhov coll. ECUADOR: 1 male, Morona Santiago Prov., Mendes, 2°44′37′′S, 78°18′27′′W, 482 m, 28 November 2011, V. Sinyaev, O. Romanov coll.

Note. This remarkable (large and spotted) species was synonymized with *E. rufovariegata* (Chopard, 1918) by Grant (1964). The latter author considered distinct differences between them in the shape of male copulatory structures as variations of the same species. However, he worked with only museum specimens. Moreover, he wrote that *E. rufovariegata* consists of two morphologically different "populations": eastern one, from French Guiana (type locality of *E. rufovariegata*) to Espirito Santo in Brazil; and western one, from Colombia and Peru to "north central Brazil" (type locality of *E. sanguinea*). His pictures of male copulatory structures in these "populations" (Grant 1964: figs 222, 223, 226, 227) clearly show that he synonymized two separate species having



Figs 39–54. *Vellea* Walk.: 39–46 – *V. pulchra* sp. nov.; 47–53 – *V. mexicana* Marquez, Peru (47 – 49, 51 – 53), Mexico (50); 54 – *V. ?cruenta* (Burm.), locality unknown. Head and pronotum from side and slightly above (39, 47); outer (40, 48) and inner (41, 49) sides of fore femur and tympanal region; male abdominal apex from above (42); male genital plate from below (43, 44, 50, 51); male genitalia from above (45) and from other position (46); female genital plate from below (52, 53, 54). Scale bars: 2 mm for Figs 39, 47; 1 mm for Figs 40–44, 48–54; 0.5 mm for Figs 45, 46.

similar both colouration and structure of the other bodyparts. It seems to me that Grant overrated similarity in the general appearance and underrated dissimilarity in the copulatory structures. In accordance to recent views, the latter structures are considered more important for separation of species from each other than many other morphological characters.

Thus, here I restore this name for a species diagnosed by the last abdominal tergite of male with a short but distinct posterodorsal projection, cerciform processes (articulated with this projection) strong and short (hook-like in profile), and male genital plate very long; in *E. rufovariegata*, the last tergite is almost without posterodorsal projection, its cerciform processes are much longer (weakly curved but with hooked apex in profile), and male genital plate is moderately long (for comparison see the abovementioned pictures by Grant).

Euceraia insignis Hebard, 1927

Material studied. PERU: 2 males, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 6 males and 1 female, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll. ECUADOR: 1 female, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15 January 2010, A. Gorochov coll.; 1 female, Napo Prov., Cordillera Guacamayos, 0°37′15′′S, 77°49′28′′W, 2181 m, 11 November 2011, V. Sinyaev, O. Romanov coll.

Note. This species is also remarkable by its colouration (see Eades et al. 2013). It is distributed from Nicaragua, Panama, Trinidad and Colombia to French Guiana, Brazil and some localities of Peru, but it "exhibits little variation" (Grant 1964). My specimens are varied mainly in the colouration of head (from uniformly greyish or light brown to having large dark brown spots on dorsum) and in the size of dark spots on pronotum. Here it is indicated for Ecuador and other localities of Peru.

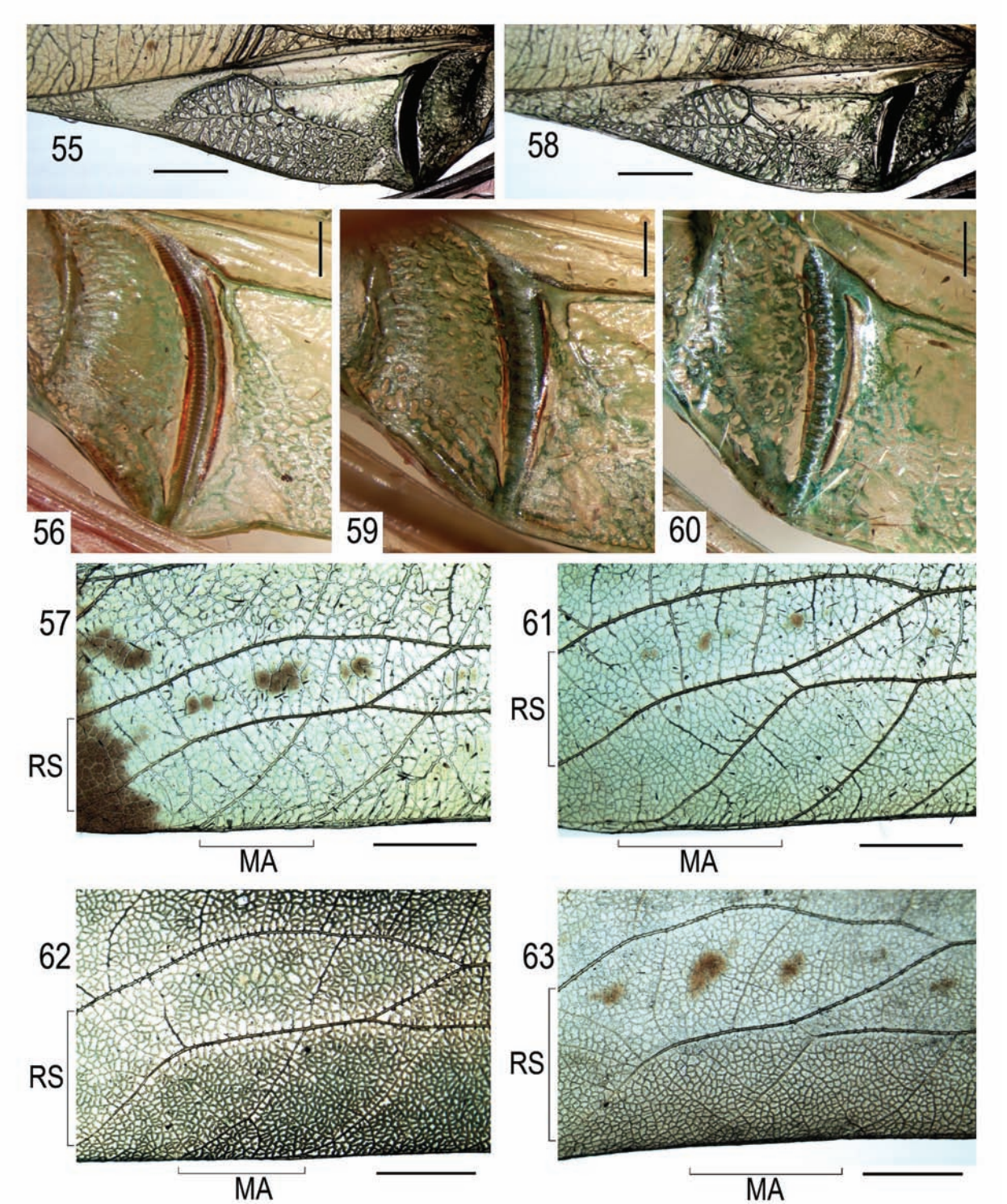
Euceraia umbrosa sp. nov.

(Figs 3, 69–73)

Etymology. The species name is the Latin word "umbrosa" (darkened).

Type material. Holotype – male, FRENCH GUIANA: "Guiane Fr., 22 km NW Régina, pk 79 Route Nle 2", 4°25′N, 52°19′W, 100 m, 21 July 1995, V. Gusarov coll.

Description. *Male*. General appearance similar to that of *E. subaquila*. Body colouration reddish brown with following pattern: head and pronotum almost uniformly dark red but with yellowish ocelli, light brown eyes, dark brown (almost blackish) labrum as well as middle and distal parts of antennal flagellum, and whitish grey spot on lower half of each lateral pronotal lobe near its middle; tegmina with red and dark red venation, brown area along anal edge from base to plectrum in left tegmen, dark brown same area and region of chords in right tegmen, browhish majority of membanes, and yellowish membranes in wide zigzag-shaped band of lateral field as well as in some cells of dorsal field of left tegmen (Fig. 3); hind wings greyish brown with large yellowish spot near apex (in greyish brown part of wing, membranes somewhat lighter than venation); all tarsi partly dark brown; coxa, trochanter and proximal part of femur in middle and hind legs light brown, but latter legs also with black ventral spines of femur and darkened distal part of all spines of tibia; rest of thorax light brown with slightly darkened dorsal surface and a few small brown marks in posterior part; abdomen with almost dark reddish brown tergites and structures of abdominal apex (including genital plate), but distal part of cerci and genital plate dark brown (almost blackish). Upper rostral tubercle with small and narrow anterior apex (scape almost 3 times as wide as this apex) separated from more posterior part of this tubercle by distinct notch (this tubercle more or less similar to that of *Vellea*); ocelli rather large, almost round and approximately equal in size (only median ocellus barely smaller); tegmina slightly narrower than those of *E. subaquila* (see Figs 3 and 4), with stridulatory vein having 20 teeth on 1 mm of its middle part (Fig. 70), and with mirror as in Figs 3 and 69; hind wings distinctly extending beyond tegminal apex; posterodorsal projection of last abdominal tergite wide, short and almost truncate but with posteromedian part not membranous (this part curved downwards and fused with epiproct; Fig. 71);



Figs 55–63. *Vellea* Walk.: 55–57 – *V. pulchra* sp. nov.; 58–61 – *V. mexicana* Marquez, Peru; 62, 63 – *V. ?cruenta* (Burm.), locality unknown (62), ?Rio de Janeiro (32). Stridulatory apparatus of left tegmen (55, 58); its stridulatory vein from below (56, 59, 60); region of RS bifurcation with distal part of MA in left tegmen (57, 61–63). Scale bars: 2 mm for Figs 55, 57, 58, 61–63; 1 mm for Figs 56, 59, 60.

articulated cerciform processes of this tergite almost hook-like (moderately short, strong and curved medially and slightly downwards; Fig. 71); cerci rather short, conical, with distal part bifurcate and somewhat compressed laterally (dorsal apical spine large, strongly sclerotized, distinctly curved medially and downwards; ventral apical lobule smaller, almost finger-like; Figs 71, 72, 73); genital plate as in Fig. 72.

Female unknown.

Length (mm). Body 21; body with wings 46; pronotum 5.1; tegmina 33; hind femora 26.

Comparison. The new species is close related and most similar to *E. subaquila* Grant, 1964, but it differs from the latter species in the following characters: clearly thinner stridulatory vein having much less dense teeth (in *E. subaquila*, this vein is with about 40 teeth on 1 mm of its middle part; for comparison see Figs 70 and 76); absence of wide and rather deep posteromedian notch of the last tergite in male; more distinctly compressed distal part of male cerci having more curved dorsal apical spine of these cerci (in *E. subaquila*, this spine is almost straight; see Figs 73 and 81).

Remark. This species was probably indicated as a geographic variation of *E. subaquila* from "British Guiana" (Grant 1964). However, the above-mentioned significant differences in the tegminal stridulatory apparatus and male copulatory structures clearly show that it is a separate species.

Euceraia subaquila colorata subsp. nov.

(Figs 80, 81)

Etymology. The subspecies name is the Latin word "colorata" (coloured).

Type material. Holotype – male, ECUADOR: eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying forest, on leaf of tree at night, 2–9 November 2005, A. Gorochov, A. Ovtshinnikov coll.

Description. *Male*. General appearance similar to that of *E. umbrosa*. However, colouration of body with following differences: head and pronotum uniformly yellowish but with light brown proximal part of antennal flagellum and brown rest of this flagellum; tegmina with yellowish venation in distal half, light brown (with reddish tinge) venation in proximal half of lateral field, whitish most part of venation in dorsal field, light brown stridulatory vein, brown and transparent membranes of lateral field (forming spotted pattern similar to that in Fig. 4 but with somewhat larger light spots), 3 dark brown spots in dorsal field (distal, basal and in region of chords), 1 brown spot in region of lateral (costal) edge of mirror, and greyish (semitransparent) other membranes of dorsal field (Fig. 80); pterothorax and legs yellowish with a few darkened marks in upper half of pterothorax, brown ventral spines of middle tibia and of hind femur; abdomen with light brown proximal tergites and most part of cerci, almost brown distal tergites (including cerciform processes) and styles of genital plate, and yellowish sternites and rest of latter plate. Tegmina slightly wider than in *E. umbrosa*, with somewhat larger dorsal field, slightly longer mirror similar to that from Fig. 74, thicker stridulatory vein (Fig. 80) having about 40 ventral teeth on 1 mm of its middle part, and proximal part of interradial area slightly wider than nearest part of radial area (in *E. umbrosa*, these parts almost equal in width) but clearly narrower than in Fig. 4 (other characters of tegminal structure in new subspecies almost identical to those from this figure). Posterodorsal projection of last abdominal tergite with rather large posteromedian notch similar to that from Fig. 77; median part of this projection almost as in *E. umbrosa* but narrower; cerci gradually narrowing to apex, with distal part moderately curved medially (but not downwards), and with short and almost straight dorsal apical spine (Fig. 81).

Female unknown.

Length (mm). Body 21; body with wings 47; pronotum 5.2; tegmina 35; hind femora 27.

Comparison. The new species is distinguished from the nominotypical subspecies from Peru by distinctly lighter colouration of head, pronotum, legs, and dorsal field of male tegmina (including stridulatory vein), as well as slightly longer stridulatory vein in left tegmen (see Figs 75 and 80), distinctly narrower tegminal interradial area and not membranous posteromedian part of last tergite in male.

Euceraia subaquila subaquila Grant, 1964, stat. nov.

(Figs 4, 65, 74–79)

Material studied. PERU: 2 males, Ucayali Department, "11 km on 230° from Puerto Bermudes", 10°29.9′S, 75°3.1′W, 713 m, 10–12 March 2011, V. Sinyaev, A. Poleschuk coll.; 3 males and 1 female, same department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill.,

Figs 64–68. Phaneropterinae, ovipositor from side: 64 – *Vellea mexicana* Marquez; 65 – *Euceraia subaquila subaquila* Grant; 66 – *Ceraia intermedia* (Marquez); 67 – *Pycnopalpa porphyretica* sp. nov.; 68 – *Hetaira angusta* sp. nov. Scale bars: 2 mm.

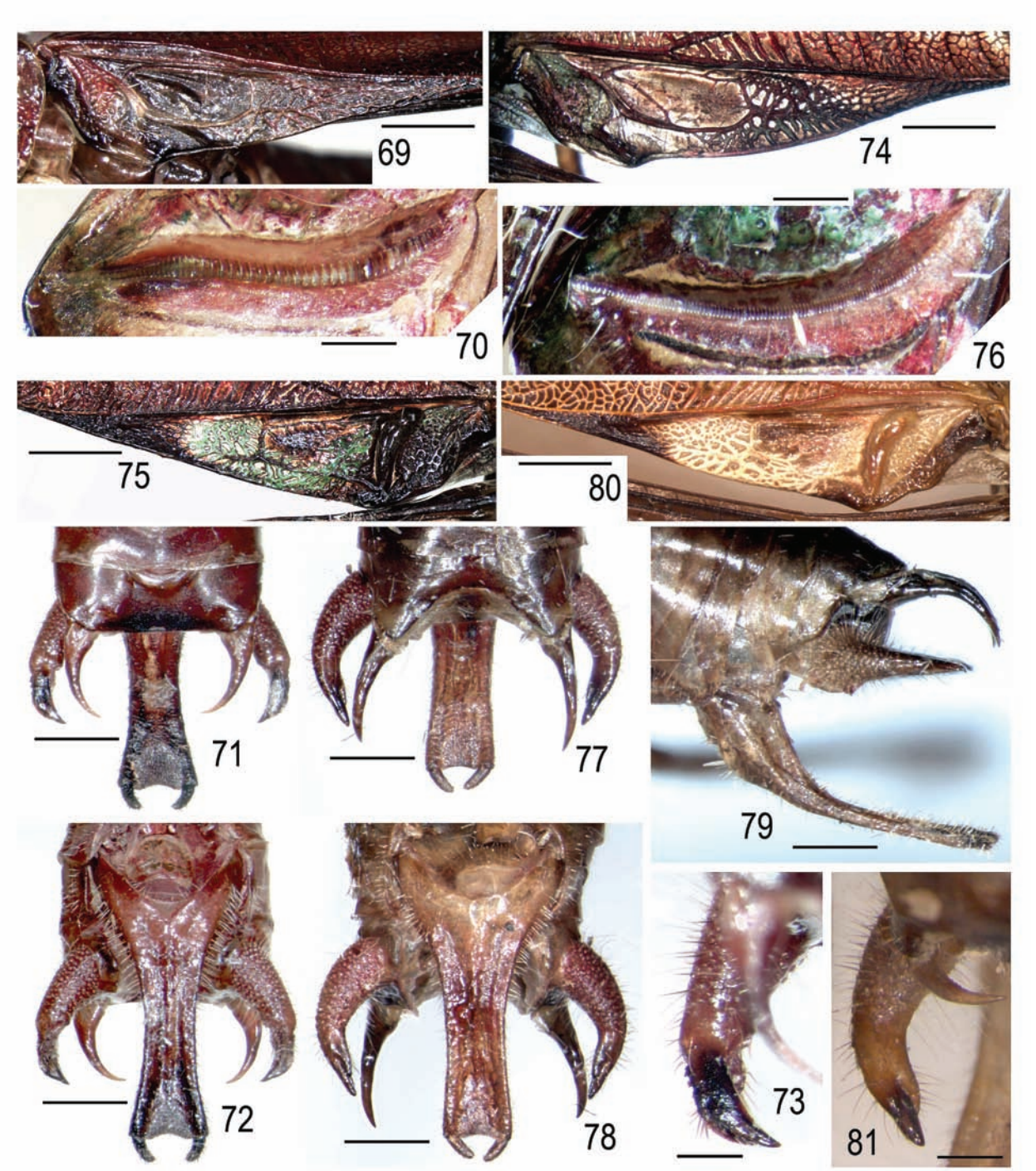
~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Note. These specimens are in accordance to the original description of *E. subaquila* but with less curved cerci in male; the latter difference may be a result of another position of cerci in pictures by Grant (1964: figs 217, 221). From the previous subspecies, it differs in clearly darker colouration of many bodyparts, slightly shorter stridulatory vein in left tegmen (Fig. 75), clearly wider proximal part of the interradial area in both tegmina (Fig. 4), and partly membranous posteromedian part of the last tergite in male (Fig. 77).

Euceraia cornuta (Brunner-Wattenwyl, 1891)

Material studied. 3 males, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll. 1 male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15 January 2010, A. Gorochov coll.

Note. General appearance of this species is less remarkable than in the previous congeners men-



Figs 69–81. *Euceraia* Heb., male: 69–73 – *E. umbrosa* sp. nov.; 74–79 – *E. subaquila subaquila* Grant; 80, 81 – *E. s. colorata* subsp. nov. Dorsal field of right (69, 74) and left (75, 80) tegmina; stridulatory vein from below (70, 76); abdominal apex from above (71, 77), from below (72, 78), and from side (79); left cercus, dorsal and slightly medial view (73, 81). Scale bars: 2 mm for Figs 69, 74, 75, 80; 0.5 mm for Figs 70, 73, 76, 81; 1 mm for Figs 71, 72, 77–79.

tioned here: body almost uniformly greenish but with dark brown both scape and pedicel in the antennae. It was described from Brazil. Later, it was recorded from Guiana and Loreto Department of Peru as two "populations" of the same species with some differences in the male copulatory structures again (Grant 1964). My males are practically identical to the photographs of *E. cornuta* holotype (Eades et al. 2013). Here it is indicated for Ecuador and another department of Peru.

***Euceraia cercata* sp. nov.**
(Figs 82–84, 94–98)

Etymology. This name originates from "cercus", a scientific term from Greek word meaning tail.

Type material. Holotype – male, PERU: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Paratypes: 18 males, same data as for holotype; 2 males, same department and province, environs of Satipo Town, ~800 m, secondary forest near waterfall, at light, 4–5 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 10 males, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 1 male, same department, "11 km on 230° from Puerto Bermudes", 10°29.9′S, 75°3.1′W, 713 m, 10–12 March 2011, V. Sinyaev, A. Poleschuk coll.; male, San Martin Department, Uchiza, 8°26.6′S, 78°26.6′W, 542 m, 18–19 February 2011, V. Sinyaev, A. Poleschuk coll.

Description. Male (holotype). General appearance similar to that of *E. cornuta*, but body size somewhat smaller; coloration of body also almost uniformly greenish, but scape and pedicel in antennae not darkened, fore femur having large dark brown middle area on ventral surface fused with a few large dark brown ventral dots on inner surface and with dark brown transverse band on outer surface (Fig. 94), and hind wings with transparent membranes excepting apical area (this area almost completely greenish). Structure of body (including shape of mirror in right tegmen; Fig. 83) similar to that of *E. umbrosa* but with following characteristic features: dorsal field of left tegmen with strongly inflate and very short vein partly fused with stridulatory vein (Fig. 82); posterodorsal projection of last abdominal tergite divided into a pair of wide and almost truncate lobes by rather small posteromedian notch (Fig. 95); hooks (cerciform processes), articulated with these lobes, short and strong, distinctly curved medially and slightly curved downwards (Figs 95, 97); cerci moderately short and curved upwards, with moderately thin middle part, and with widened (slightly inflate) subapical part having dense and rather long hairs as well as strong dorsal apical hook (distinctly curved medially) and smaller ventral apical lobule (Figs 95, 97, 98); genital plate long (much longer than cerci) and with lateral edges of its narrow part almost parallel (Figs 96, 97).

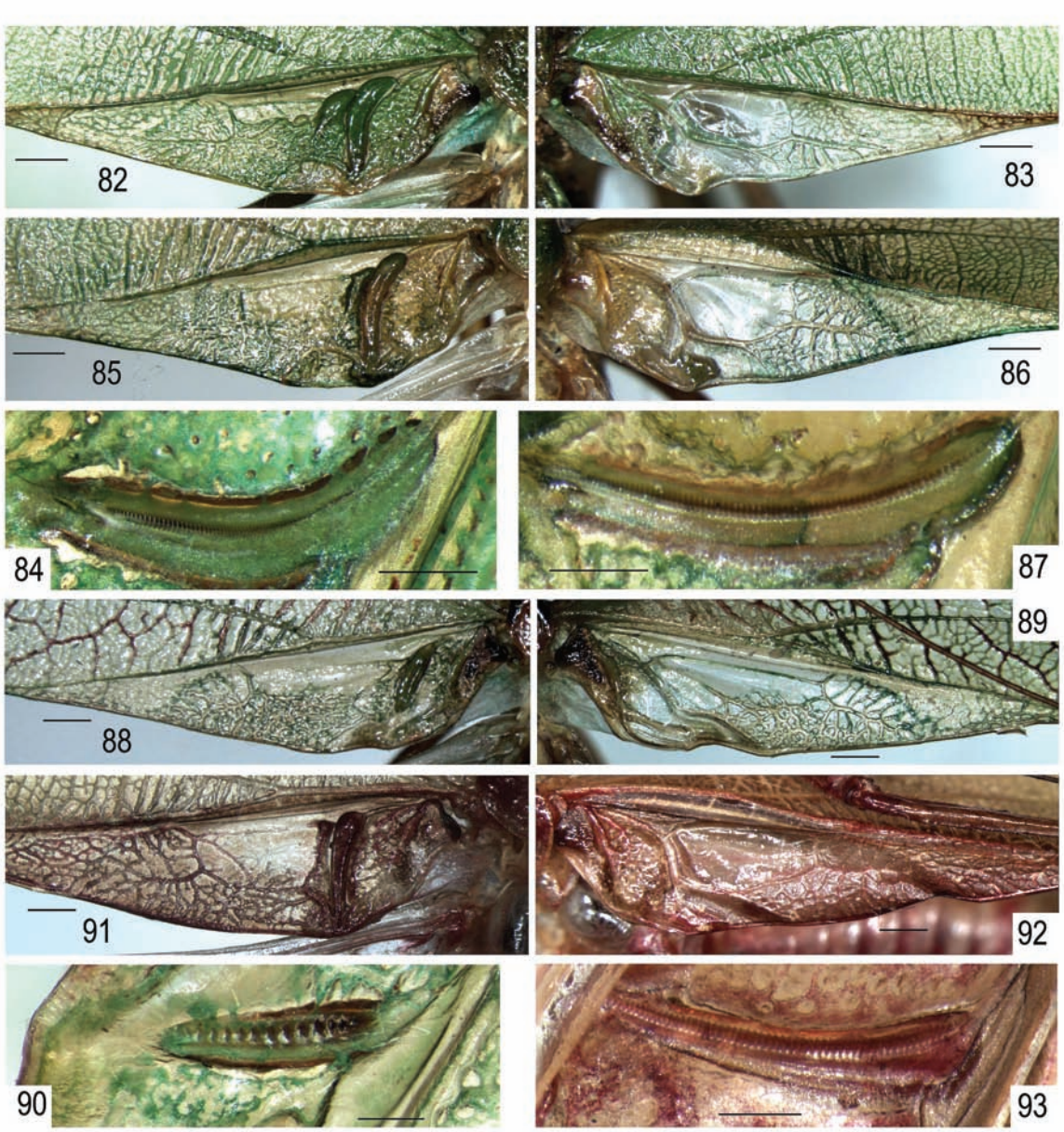
Variations. Hind part of pronotal disc sometimes slightly darkened; fore femora sometimes with light brown inner surface and without dark band on outer surface (but with traces of this band: narrow dark stripe along ventral edge of femur); fore tibiae sometimes with slightly darkened tympanal membranes; subapical part of cerci somewhat varied in width; apex of genital plate also slightly varied in shape.

Female unknown.

Length (mm). Body 20–25; body with wings 44–49; pronotum 5.2–5.8; tegmina 33–37; hind femora 21–24.

Comparison. The new species differs from *E. femorata* (Chopard, 1918), which is probably a most similar and close-related species, in a distinctly less deep posteromedian notch of posterodorsal projection of male last tergite, the subapical part of cerci clearly wider than their middle part, and male genital plate with the narrow part much longer (in *E. femorata*, apex of this plate reaches the cercal apices; see Figs 95–98 and 99–101).

Remark. The new species was also indicated as a geographic variation of *E. femorata* from "Hyatanahan, Amazonas, Brazil, west to northern Peru east of the Andes divide" (Grant 1964). However, *E. femorata* was described from French Guiana and, judging by this author, belongs to a different variation "known from the Guianas and west to Manaus, Brazil". The above-named important differences in the male copulatory structures clearly testify that they are separate species. The both synonyms of *E. femorata* (*E. bos* Piza, 1950 and *Aracuincola laminatus* Piza, 1980), described from the latter locality and



Figs 82–93. *Euceraia* Heb., male: 82–84 – *E. cercata* sp. nov.; 85–87 – *E. cercata elchaco* subsp. nov.; 88–90 – *E. abnormalis parallela* subsp. nov.; 91–93 – *E. gusarovi* sp. nov. Dorsal field of left (82, 85, 88, 91) and right (83, 86, 89, 92) tegmina; stridulatory vein from below (84, 87, 90, 93). Scale bars: 1 mm for Figs 82, 83, 85, 86, 88, 89, 91, 92; 0.5 mm for Figs 84, 87, 90, 93.

mentioned in the catalogue by Eades et al. (2013), are evidently true synonyms of *E. femorata* (see also Chamorro-Rengifo and Braun 2010); it follows from the photographs of their holotypes published in the above-mentioned catalogue, and from comparison with the original descriptions (Chopard 1918; Piza 1950, 1980).

Euceraia cercata elchaco subsp. nov.
(Figs 85–87)

Etymology. The subspecies is named after its type locality, El Chaco Vill.

Type material. Holotype – male, ECUADOR: 75 km SEE of Quito City, environs of El Chaco Vill.

on Rio Quijos, 1500 m, secondary forest, on leaf of small tree at night, 18–22 November 2005, A. Gorochov, A Ovtshinnikov coll.

Description. *Male*. General appearance very similar to that of nominotypical subspecies (including shape of cerci and of other structures of abdominal apex), but distal half of scape and pedicel in antennae darkened (brown), fore femora uniformly greenish with only two brown dots on outer side of each femur along its ventral edge, tegmina slightly wider (tegmen 3.8 times as long as wide, but in *E. c. cercata* stat. nov., tegmen 4.4–4.5 times as long as wide), dorsal tegminal field distinctly wider and with clearly longer and less curved stridulatory vein (for comparison see Figs 82, 84 and 85, 87), mirror of right tegmen also wider and with distal part of medial edge situated more far from anal edge of tegmen (see Figs 83 and 86).

Female unknown.

Length (mm). Body 22; body with wings 47; pronotum 5.6; tegmina 36; hind femora 23.

Comparison. Differences of this new subspecies from *E. c. cercata* are listed above (see description). These differences (especially in stridulatory devices) are rather significant, and I cannot exclude that *E. c. elchaco* may be a separate species, close related to *E. cercata*. The new subspecies is somewhat similar to *E. cornuta* in the antennal coloration and shape of right mirror, but in *E. cornuta*, the darkened basal part of antennae is clearly darker (almost black), cerciform processes of last tergite of male are much longer and not hooked, and male cerci are also much longer and rather simple in shape.

Euceraia convoluta sp. nov.
(Figs 108–111, 117–119)

Etymology. The species name is the Latin word "convoluta" (convolute).

Type material. Holotype – male, PERU: Junin Department, Satipo Prov., environs of Satipo Town, ~800 m, secondary forest near waterfall, at light, 4–5 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Paratypes: 3 males, PERU, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Description. *Male* (holotype). General appearance similar to that of *E. cercata*, but body smaller and almost completely yellowish green (scape, pedicel and fore femora without darkened areas) excepting following marks: eye and most part of antennal flagellum brown; basal part of this flagellum, dorsum of epicranium and tympanal membranes light brown; distal part of spines on legs and apical hook of cerci dark brown. Dorsal field of tegmina rather wide, with long stridulatory vein touching small (short and weakly inflate) additional vein almost in one dot (Figs 117, 119), and with mirror of right tegmen rather long and narrowing to truncate apex of mirror (Fig. 118). Last abdominal tergite with a pair of elongate angular lobes having rather deep notch between them, with cerciform processes (articulated with these lobes) very thin and strongly arcuately curved, with distal parts of these processes acute (spine-like) and crossing each other in rest position (Figs 108, 110); cerci with straight proximal half and strongly (almost angularly) medially curved distal part; this part lamellar, widened, convoluted in shape of tube, with rather long and practically straight sclerotized hook and with clearly shorter lobule in apical part (this lobule flattened and practically lain on basal part of latter hook; Fig. 111); genital plate with narrow middle part and with distinctly widened and rather long distal part (Figs 109, 110).

Variations. Most part of pronotal disc or only its hind lobe light brown with reddish tinge. Additional vein (contacting with stridulatory vein) sometimes clearly longer, but medial half of this additional vein somewhat less inflate.

Female unknown.

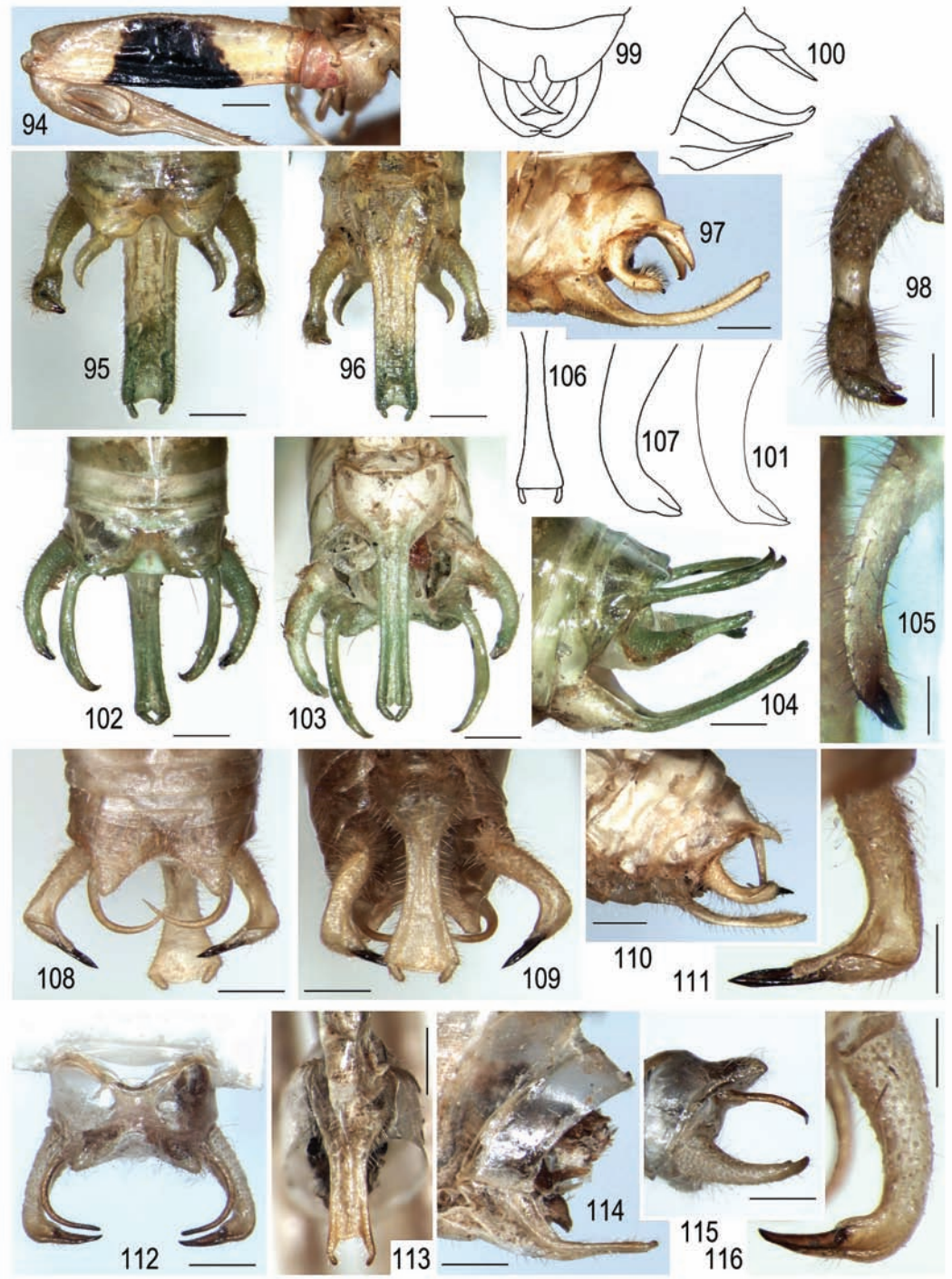
Length (mm). Body 15–18; body with wings 38–40; pronotum 4.5–4.8; tegmina 27–29.5; hind femora 20.5–21.5.

Comparison. The new species clearly differs from all the other congeners in the male cerci having convolute, tube-like distal part.

Euceraia proxima sp. nov.
(Figs 112–116, 120–122)

Etymology. The species name is the Latin word "proxima" (nearest).

Type material. Holotype – male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill.,



Figs 94–116. *Euceraia* Heb., male: 94–98 – *E. cercata* sp. nov.; 99–101 – *E. femorata* (Chop.); 102–105 – *E. abnormalis parallela* subsp. nov.; 106, 107 – *E. a. abnormalis* (Bruner); 108–111 – *E. convoluta* sp. nov.; 112–116 – *E. proxima* sp. nov. Outer surface of fore femur (94); abdominal apex from above (95, 102, 108), from below (96, 103, 109), and from side (97, 100, 104, 110); cercus from above (98, 101, 105, 107, 111, 116); abdominal apex without genital plate from above (99, 112) and from side (115); genital plate (113) and its posterior half (106) from below; genital plate with 9th abdominal tergite from side (114). Scale bars: 1 mm for Figs 94–97, 102–104, 108–110, 112–115; 0.5 mm for Figs 98, 105, 111, 116. [99–101, 106, 107 – after Grant 1964].

~300 m, primary forest, at light, 5–15 January 2010, A. Gorochov coll.

Description. *Male*. Size, colouration and structure of body very similar to those of *E. convoluta* but with following differences: epicranium and pronotum uniformly yellowish (probably yellowish green in living specimen); dorsal tegminal field slightly smaller, with slightly shorter and somewhat more curved stridulatory vein (additional inflate vein near it very small and almost indistinct; Figs 120, 122), and with almost angular apex of mirror in right tegmen (Fig. 121); cerciform processes of last abdominal tergite with somewhat darkened distal part and narrowly rounded (not acute) apex (Figs 112, 115); cerci with more weakly widened distal part having only elongate concavity on dorsal surface (this concavity looking as early stage in development of tube-like convolution of this distal part presented in cerci of *E. convoluta*), and with very small lobule near base of sclerotized apical hook (Fig. 116); genital plate clearly shorter, with more parallel lateral edges of distal half and deeper posteromedian notch (Figs 113, 114).

Female unknown.

Length (mm). Body 20; body with wings 39; pronotum 4.4; tegmina 27.5; hind femora 21.

Comparison. Differences of the new species from a most similar species (*E. convoluta*) are listed above (see description). From all the other congeners, *E. proxima* differs in the male cerci almost angularly curved and with a long and almost straight apical hook.

Euceraia atrosignata (Brunner-Wattenwyl, 1891)

Material studied. PERU: 3 males and 1 female, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll. ECUADOR: 4 males, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15 January 2010, A. Gorochov coll.; 1 male, same province, "road Gualaceo – Plan de Milagro", 3°0′21′′S, 78°29′53′′W, 2033 m, 22 November 2011, V. Sinyaev, O. Romanov coll. FRENCH GUIANA: 2 males, "Guiane Fr., 22 km NW Régina, pk 79 Route Nle 2", 4°25′N, 52°19′W, 100 m, 28 June 1995, V. Gusarov coll.

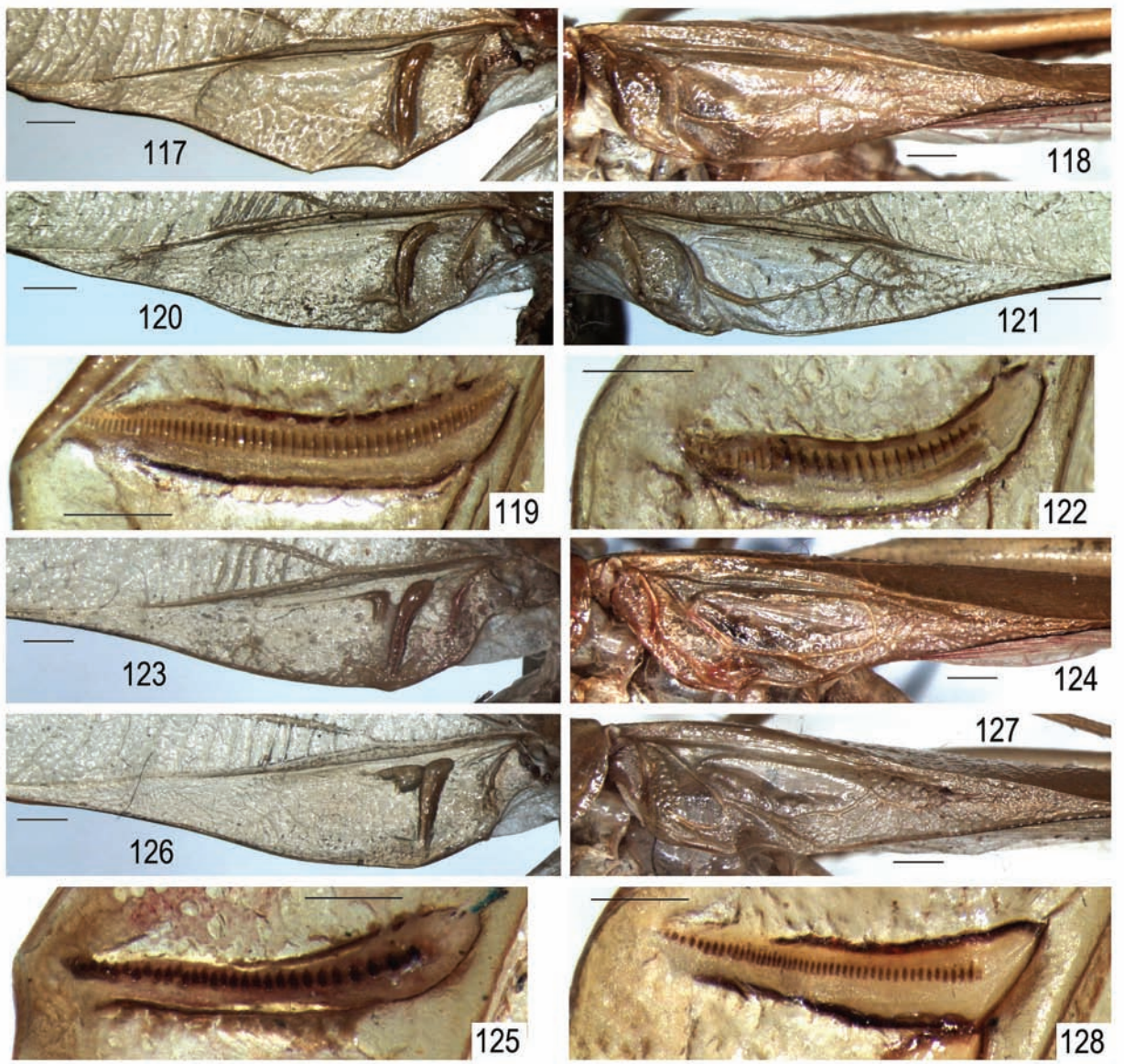
Note. These specimens are slightly varied in the body colouration and shape of some structures: majority of these specimens are with a reddish vertical band on the mesothoracic pleurites along hind edge of lateral pronotal lobes, but one specimen from Peru is without such band; pronotal disc is light brown (almost not darker than pronotal lateral lobes) in some specimens from Peru, but it is almost reddish brown (clearly darker than these lobes) in all the other specimens studied; distal part of right mirror and proximal part of distal half of cerciform processes of last tergite are somewhat narrower in males from French Guyane. The latter differences are possibly subspecies ones, but these characters are insufficient for a decision of this problem. This species is described from Brazil and recorded from Peru, Bolivia and Surinam; here it is indicated for Ecuador and French Guiana.

Euceraia abnormalis parallela subsp. nov.
(Figs 88–90, 102–105)

Type material. Holotype – male, PERU: Cusco Department, 7 km NE of Mandor, 13°18.7′S, 70°49.5′W, 890 m, 1–3 December 2010, V. Sinyaev, S. Sinyaeva, Yu. Bezverkhov coll.

Paratype – 1 male, PERU: Junin Department, Satipo Prov., garden-forest very near Satipo Town, ~600 m, at light, 15 October – 6 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Description. *Male* (holotype). General view similar to that of *E. cercata*, but body colouration yellowish green with following marks: head with dorsum of epicranium and distal half of antennae brown, and with proximal part of antennal flagellum light brown; pronotum light brown with reddish tinge, brown hind lobe, and characteristic dark brown spot on each lateral part of this lobe; wings with some crossveins in lateral tegminal field reddish, small basal part of dorsal tegminal field brown, and most part of membranes in hind wings transparent; legs almost uniformly light brown but with more or less yellowish basal parts and middle and hind tibiae, with brown distal part of all spines, and with almost whitish rest part of spines on hind femora. Structure of bodyparts also similar to that of this species but distinguished by following characters: stridulatory vein distinctly shorter and not curved, with additional vein near it almost undeveloped (very weakly inflate; Figs 88,



Figs 117–128. *Euceraia* Heb., male: 117–119 – *E. convoluta* sp. nov.; 120–122 – *E. proxima* sp. nov.; 123–125 – *E. varia* sp. nov.; 126–128 – *E. v. simulata* subsp. nov. Dorsal field of left (117, 120, 123, 126) and right (118, 121, 124, 127) tegmina; stridulatory vein from below (119, 122, 125, 128). Scale bars: 1 mm for Figs 117, 118, 120, 121, 123, 124, 126, 127; 0.5 mm for Figs 119, 122, 125, 128.

90); mirror of right tegmen longer and with distinctly narrower distal part (Fig. 89); last abdominal tergite with cerciform processes distinctly longer, somewhat flattened, almost straight in proximal half, and with distal part slightly and apical part strongly curved medially and upwards (latter part acute; Figs 102, 104); cerci arcuate and gradually narrowing to apical part having short (weakly curved and not acute) sclerotized hook and only slightly shorter finger-like lobule near it (Fig. 105); genital plate with barely widened distal part having styles with apices touching each other (however, lateral edges of distal half of this plate looking practically parallel, almost as in *E. cercata*; Fig. 103).

Variations. Paratype with slightly more uniformly light colouration of body: head and pronotal disc

light brown but with distinct dark brown mark on each lateral part of hind pronotal lobe; all crossveins of tegmina light (not partly reddish).

Female unknown.

Length (mm). Body 16–21; body with wings 40–43; pronotum 4.4–4.8; tegmina 30–32.5; hind femora 21–23.

Comparison. The new subspecies differs from a nominotypical subspecies, *E. a. abnormalis* (Brunner, 1925), stat. nov. described from central part of Brazil, in the male genital plate with almost parallel lateral edges of distal half (*vs.* with very narrow middle and widened distal parts of this plate; for comparison see Figs 103 and 106), and in less curved male cerci (see Figs 105 and 107). Judging by the photographs in Eades et al. (2013), *E. a. parallela* differs from *E. rufithorax* Piza, 1950 (type locality: southeast part of Brazil) in the presence of dark spots on the hind pronotal lobe and at the base of tegmina, stridulatory vein shorter, region of chords in the male right tegmen clearly narrower than mirror and without transparent areas and crossveins, anal edge of the both tegmina behind (near) plectrum slightly concave (*vs.* not concave), and distal part of cerciform processes of male last tergite distinctly curved upwards and medially (*vs.* almost not curved); from *E. dynatra* Grant, 1964 (type locality: Peru), this new subspecies differs in the same characters of body colouration, right mirror clearly narrowing to narrowly truncate apex (*vs.* not narrowing), additional vein near stridulatory vein less inflate, and cerciform processes of male last tergite clearly less curved upwards and medially; from *E. atryx* Grant, 1964 (type locality: Surinam), it differs in the same characters of body colouration, stridulatory and additional veins (situated near each other) distinctly shorter, right mirror somewhat narrower and longer, and cerciform processes of male last tergite with their distal part curved upwards; and from *E. atrosignata*, in the presence of dark spots on the hind pronotal lobe, shorter stridulatory vein, and much longer (clearly less hook-like) cerciform processes of male last tergite.

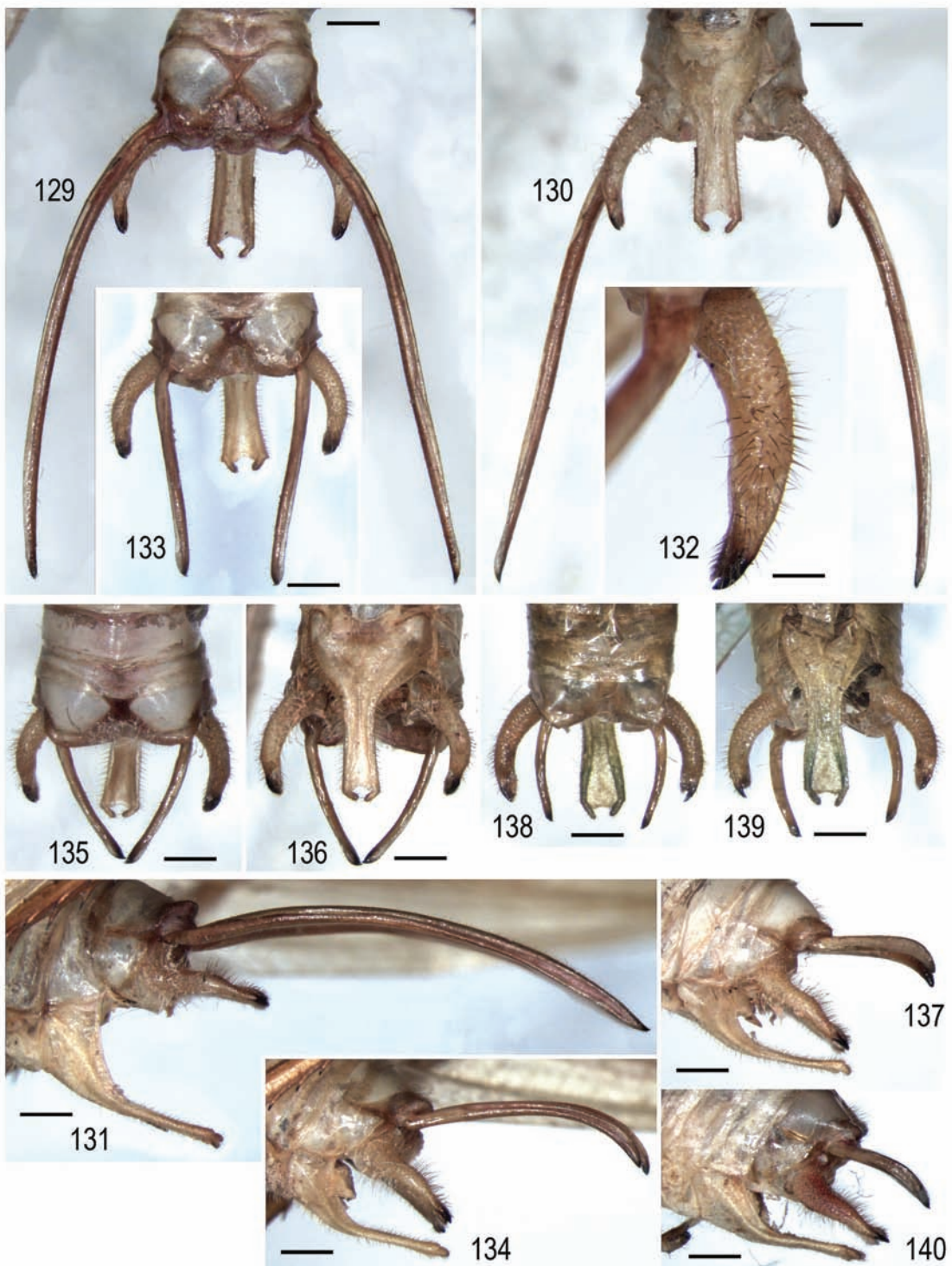
***Euceraia varia* sp. nov.**
(Figs 123–125, 129–137, 191, 198)

Etymology. The species name is originated from the Latin word "varia" (variable).

Type material. Holotype – male, PERU: Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Paratypes: 17 males and 1 female, same data as for holotype; 1 male, same department, "11 km on 230° from Puerto Bermudes", 10°29.9′S, 75°3.1′W, 713 m, 10–12 March 2011, V. Sinyaev, A. Poleschuk coll.; 11 males, PERU: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 5 males, same department and province, environs of Satipo Town, ~800 m, secondary forest near waterfall, at light, 4–5 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Description. *Male* (holotype). General appearance more or less similar to that of *E. cercata*, *E. abnormalis*, *E. cornuta*, *E. atrosignata*, *E. convoluta*, *E. proxima* and other almost uniformly greenish congeners. Body yellowish green with following marks: dorsum of epicranium, scape, pedicel, pronotal disc, some veins at base of tegmen and some membranes of abdominal apex with reddish tinge; antennal flagellum brown with light reddish brown proximal part; membranes of hind wings (excepting apical part) transparent; areas on proximal part of fore tibia (including area on tympanal membranes), complete hind tibia, distal part of other tibiae, all tarsi, and cerciform processes of last tergite light brown; distal part of spines of hind leg and most part of spines of other legs blackish; apical part of cerci (including finger-like apical lobule) and of cerciform processes brown but with heavily sclerotized apical hook dark brown. Upper rostral tubercle of head with additional small angular projection instead more or less rounded convexity developed in other congeners behind denticle-like anterior apex. Pronotal lateral lobes with posteroventral edge more oblique than in majority of other congeners but similar to that of *E. dynatra* (see Grant 1964: fig. 168). Dorsal field of tegmina moderately wide, with rather long and transverse stridulatory vein having rather thick and not very numerous teeth (Figs 123, 125), with short inflate additional vein situated near stridulatory vein but not touching it (Fig. 123), and with long mirror of right tegmen similar to that of *E. umbrosa*, *E. subaquila* and *E. cercata cercata* in shape (Fig. 124). Last abdominal tergite having semimembranous pos-



Figs 129–140. *Euceraia* Heb., male: 129–137 – *E. varia* sp. nov., with long cerciform processes (129–132), with intermediate (133, 134) and short (135–137) ones; 138–140 – *E. v. simulata* subsp. nov. Abdominal apex from above (129, 133, 135, 138), from below (130, 136, 139), and from side (131, 134, 137, 140); cercus from above (132). Scale bars: 0.5 mm for Fig. 132; 1 mm for all other Figs.

teromedian part and looking as tergite divided into a pair of rounded hind lobes with rather deep and wide notch between them (Fig. 129); cerciform processes of this tergite very long, weakly curved downwards, slightly compressed laterally, with acute apex, and with longitudinal groove on outer surface (Figs 129–131); cerci short, moderately arcuate, with apical sclerotized hook slightly curved medially, and with apical lobule finger-like and almost reaching apex of this hook (Figs 130, 131, 132); genital plate not very long, with distal half straight in profile and having almost parallel lateral edges, and with apical part as in Fig. 130.

Variations. In paratypes, cerciform processes of last tergite very variable in length but having similar structure (Figs 133–137). Differences in size and shape of other structures of abdominal apex and in stridulatory apparatus very insignificant. Pronotal disc and small basal area of dorsal tegminal field sometimes from light reddish brown to brown.

Female. General appearance as in holotype, but all tibiae (excepting spines) and tarsi as well as cerci almost yellowish, and dorsal tegminal field and abdominal apex more or less similar to those of female of other congeners (genital plate and ovipositor as in Figs 191, 198).

Length (mm). Body; male 17–22, female 19; body with wings: male 39–42, female 43; pronotum: male 4.6–4.9, female 5; tegmina: male 27–32, female 32.5; hind femora: male 20–22, female 22.5; ovipositor 7.5.

Comparison. The new species is similar to *E. cornuta* and *E. atryx* in very long cerciform processes of the last tergite in some males, but it differs from the first species in these processes arcuate in profile (not S-shaped), male cerci much shorter, scape and pedicel light, and bodysize smaller; from *E. atryx*, the new species differs in another shape of the right tegminal mirror, the above-mentioned cerciform processes curved downwards (not medially), and male genital plate distinctly shorter. Males of *E. varia* with shorter cerciform processes of the last tergite are distinguished from males of similar congeners by the following characters: from *E. cornuta* sensu Grant (1964: fig. 189), by the same character of male cerci as from true *E. cornuta*; from *E. abnormalis*, *E. atrosignata* and *E. dynatra*, by the above-mentioned cerciform processes curved downwards (not upwards), male cerci arcuate but not with S-shaped distal part (only from *E. dynatra*), and additional inflate vein not touching stridulatory vein (only from two other species); from *E. femorata*, by the posteromedian notch of male last tergite less narrow, male cerci with weakly (not strongly) curved distal part, and fore femora uniformly light (not with dark mark); from *E. rufithorax*, by the mirror of right tegmen with clearly wider distal half, distal part of male cerciform processes somewhat curved downwards (not almost straight), cerci and genital plate in male shorter; and from *E. cercata*, *E. convoluta* and *E. proxima*, by very different shape of the male cerci.

Remark. I cannot exclude that this species might be indicated for Peru by Grant (1964) as a "variation" of *E. dynatra*.

Euceraia varia simulata subsp. nov.
(Figs 126–128, 138–140)

Etymology. The subspecies name is originated from the Latin word "simulata" (simulate).

Type materal. Holotype – male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, at light, 5–15 January 2019, A. Gorochov coll.

Paratypes: 1 male, same data as for holotype; 2 males, same province, Mendes, 2°44′37′′S 78°18′27′′W, 482 m, 28 November 2011, V. Sinyaev, O. Romanov coll.

Description. *Male* (holotype). Size, colouration and structure of body very similar to that of holotype of nominotypical subspecies, but abdominal apex without reddish tinge, stridulatory vein of left tegmen somewhat wider in lateral part and with teeth less thick and more densely situated, additional vein of this tegmen touching stridulatory vein and more inflate (Figs 126, 128), basal area from wing base to stridulatory vein (or to homologous part of CuP) in both tegmina somewhat larger (wider), right tegmen with somewhat narrower distal part of mirror and with clearly wider space between medial (anal) edge of this mirror and anal edge of tegmen (Fig. 127), abdominal apex almost indistinguishable from that of paratypes of *E. v. varia* stat. nov. having short cerciform processes of last tergite (however, posteromedian part of latter tergite somewhat more sclerotized; Figs 138–140).

Variations. Sometimes head dorsum and pronotal disc light reddish brown, anterior part of epicranium yellowish, and abdominal apex with reddish areas.

Female unknown.

Length (mm). Body 19–22; body with wings 40–42; pronotum 5–5.2; tegmina 29–30; hind femora 21–22.

Comparison. The new subspecies differs from *E. v. varia* in the characters mentioned above (see description). Most important characters are the structure of stridulatory vein, position of additional vein (nearest to the previous vein), and shape of mirror in right tegmen (for comparison see Figs 124 and 127). From all the other congeners, the new subspecies differs in the same characters of male abdominal apex in combination with rather narrow distal half of the right tegminal mirror.

***Euceraia gusarovi* sp. nov.**
(Figs 91–93, 141–144)

Etymology. The species is named in honor of its collector.

Type material. Holotype – male, FRENCH GUIANA: "22 km NW Régina, pk 79 Route Nle 2", 4°25´N, 52°19´W, 100 m, 21 July 1995, V. Gusarov coll.

Description. *Male*. General appearance similar to more or less uniformly greenish congeners. Body colouration yellowish green with following pattern: head with yellowish ocelli, light brown eyes, reddish brown apices of upper rostral tubercle and proximal part of antenna (excepting almost yellowish basal half of scape), and dark brown middle and distal parts of antenna; pronotum with reddish brown disc having 3 small dark brown marks at middle and in anterior part; legs with fore and middle femora reddish brown (including tympanal membranes), fore and middle tibiae light brown, hind tibia greyish brown (but its basal part with yellowish spots), tarsi from brown to light brown, and spines with dark brown distal area; tegmina with reddish venation in left dorsal field and some veinlets in right one (along its anal edge), small brown area at base of these fields, and yellowish (semitransparent) rest structures of these fields; hind wings transparent with greenish apical area and distal parts of veins (including crosveins between them), yellowish and light brown some veins and crossveins in rest of costal lobe, and reddish most part of other venation; posterior part of thoracic dorsum and anterior half of dorsal part of abdominal tergites (excepting last one) reddish; last tergite with reddish brown dorsum and reddish dorsal half of proximal part of cerciform processes; cerci with dark brown apical hook. Head with upper tubercle having additional denticle-like apex similar to that of *E. varia*; pronotum with lateral lobes almost as in *E. rufovariegata* (see Grant 1964: fig. 168); structure of wings typical of this genus, with stridulatory apparatus as in Figs 91–93; last abdominal tergite practically without posterodorsal projection but with very shallow concavity of its hind edge; cerciform articulated processes of this tergite rather short, hook-like and with inflate proximal part (Figs 141, 143); cerci very short, rather strongly curved, with small and almost straight apical hook, and with small apical lobule barely shorter than this hook (Figs 141, 142, 144); genital plate not long and with very long styles (Figs 142, 143).

Female unknown.

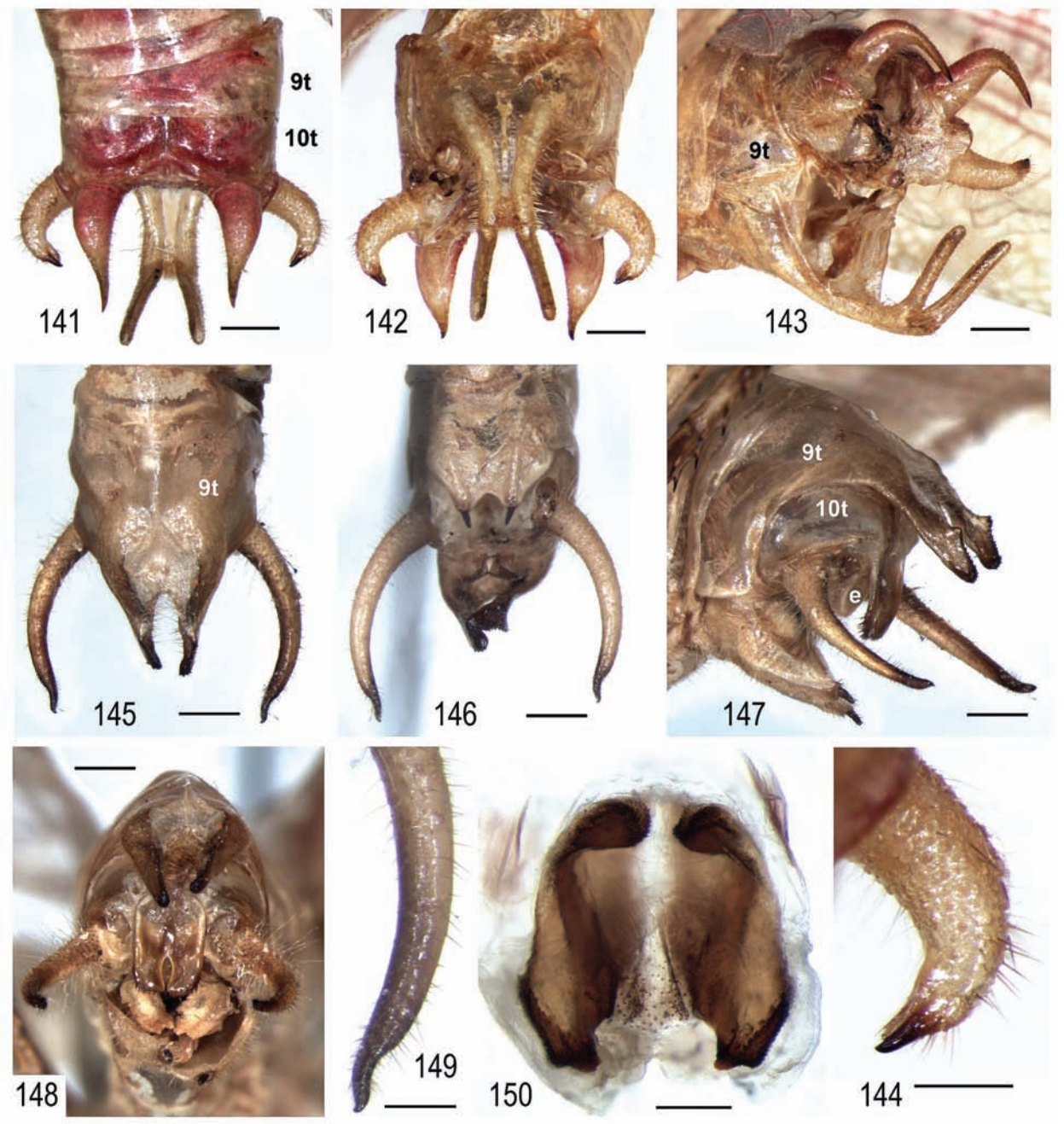
Length (mm). Body 19; body with wings 43; pronotum 5.3; tegmina 32.5; hind femora 24.

Comparison. The new species is clearly distinguished from all the other congeners by the shape of male cerciform processes (short, hook-like, curved downwards and with inflate proximal part, Figs 141–143), very short and rather strongly curved male cerci, and very long styles of the male genital plate.

Genus *Zenirella* Piza, 1973, gen. dist.

Type species: *Zenirella acreana* Piza, 1973, by monotypy and original designation.

Note. This genus was established for a single species from the north-western part of Brazil: Acre (Piza 1973). Recently, it was synonymized with *Ferreiraia* Piza, 1976 described for another species (*F. nigropunctata* Piza, 1976) from the same locality (Piza 1976), as these species names belong to the same species (Chamorro-Rengifo and Braun 2010). Judging by the photographs of their holotypes (Eades et al. 2013), these synonymies are correct. However, synonymy of *Zenirella* with *Euceraia* proposed by Chamorro-Rengifo and Braun in the same paper is very surprising. These genera are dissimilar in the structure of male abdominal apex: *Zenirella* has 9th tergite with a pair of rather long posterodorsal unarticulated processes partly covering 10th tergite and epiproct (Figs 145, 147, 148) (9th tergite of *Euceraia* simple, lacking processes); 10th tergite of *Zenirella* is with a less large lamellar unarticulated posterodorsal lobe which is almost completely covering epiproct, somewhat bifurcate posteriorly and slightly similar to that of some species from the genus *Ceraia* (Figs 147, 148) (10th tergite of *Euceraia* with a pair of hook-like



Figs 141–150. Phaneropterinae, male: 141–144 – *Euceraia gusarovi* sp. nov.; 145–150 – *Zenirella acreana* Piza. Abdominal apex from above (141, 145), from below (142, 146), from side and slightly behind (143, 147), and from behind (148); cercus from above (144, 149); male genitalia from above (150). Scale bars: 1 mm for Figs 141–143, 145–148; 0.5 mm for Figs 144, 149, 150. Abbreviations: 9t, 10t – 9th and 10th abdominal tergites; e – epiproct.

or spine-like cerciform processes articulated with its posterodorsal part); cerci in *Zenirella* are with a single heavily sclerotized apical hook (Fig. 149) (cerci in *Euceraia* are apically bifurcate, with a heavily sclerotized hook and a less sclerotized almost finger-like lobule); genital plate of *Zenirella* is rather short (Figs 146, 147) (in *Euceraia*, it is distinctly or much longer, i. e. with long and more or less narrow distal half; genital plate of *Euceraia* is similar to that of *Ceraia*); genitalia are with a large sclerotized structure (Fig. 150) (in *Euceraia*, the genitalia are membranous).

This genus possibly consists of 2 species: type species; and *Amaura punctata* Brunner-Wattenwyl, 1878 from Peru. At present, the latter species is considered as belonging to the genus *Ligocatinus* Rehn, 1901 (Eades et al. 2013), but it is very similar in the general appearance to *Z. acreana* and may be its synonym; however, I do not synonymize these species names, as I have only males of *Z. acreana*, but *Z. punctata* comb. nov. was described after female only. Also it is useful to add that *Zenirella* and *Ligocatinus* (replaced name for the homonymic *Amaura* Brunner-Wattenwyl, 1878) are separate genera: male abdominal apices of their type species (*Z. acreana* and *A. spinata* Brunner-Wattenwyl, 1878) are very different in the structure (see photographs in Eades et al. 2013).

Zenirella acreana Piza, 1973, comb. resurr.
(Figs 145–150)

Material studied. PERU: 3 males, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, partly primary / partly secondary forest, at light, 26–31 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 1 female, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Note. This species is in accordance to the descriptions by Piza (1973, 1976) as well as to photographs of holotypes of *Z. acreana* and *F. nigropunctata* (Eades et al. 2013) synonymized by Chamorro-Rengifo and Braun (2010). However, it is necessary to note that Piza as well as Chamorro-Rengifo and Braun probably considered processes of 9th abdominal tergite of male as those of 10th tergite; belonging of these processes to 9th tergite is clearly visible in the above-mentioned photographs of holotypes and in Figs 145, 147, 148. This species is here recorded from Peru.

Genus *Pycnopalpa* Audinet-Serville, 1838

Type species: *Locusta bicordata* Saint-Fargeau et Audinet-Serville, 1825, by monotypy.

Note. This genus was established as a subgenus of the genus *Phylloptera* Audinet-Serville, 1831 for one species only (Audinet-Serville 1838). Rank of *Pycnopalpa* was erected by Kirby (1890), who also designated *L. bicordata* as a type species of the genus *Soria* Walker, 1869 and synonymized this generic name with *Pycnopalpa* (Kirby 1906). In accordance to the internet catalogue of Orthoptera (Eades et al. 2013), this genus includes 5 species. However, this composition is very problematic: *P. morata* Vignon, 1930 and *P. permaculata* Vignon, 1930 were described as variations of *P. bicordata* (Vignon 1930), but Otte (1997) gave them species rank, as he considered that the same species cannot be distributed from Brazil to Central America (Otte's opinion, lacking any additional ground, is used in the above-mentioned catalogue); *P. rubiginosa* (Bruner, 1915) was described by Bruner (1915) in the genus *Topana* Walker, 1869 and transferred to *Pycnopalpa* by Rehn (1918), but Vignon (1931) did not exclude that it may be a synonym of *T. postica* Walker, 1869 (Bruner's original description clearly indicates that this species is with the pronotal disc similar to that of the genus *Hetaira* Brunner-Wattenwyl, 1891 and without transparent areas in tegmina).

This genus is included in the generic group Turpiliae (Brunner-Wattenwyl 1878; Eades et al. 2013), but its relationship to the genus *Turpilia* Stål, 1874 is not evident, and the structure of its head rostrum (usually with an unpaired additional denticle behind lateral ocelli) is more or less similar to that of the tribe Dysoniini Rehn, 1949. This genus is characterized by the presence of 2 median areas on the pronotal disc having rather smooth surface and outlined by less smooth areas (usually these smooth areas are different in the color, and sometimes one of these areas is strongly reduced; Figs 5–19), fore leg is with large lamellar spines on the ventral inner keel of femur (distal spines are with fused bases, but sometimes only a single distal spine is developed) and with strongly widened proximal part of tibia having the both tympana completely opened, tegmina are with transparent and semitransparent areas (Figs 26, 28–32), hind

wings are with an additional small fan located in the apical part and folding in rest position (Fig. 27), male epiproct is rather large and with a pair of basal lobes usually visible behind the last tergite (Figs 168, 170, 174) but hidden under its hind part in some dry specimens, cercus is simple (without processes) and with an apical hook in male (Figs 169, 171, 175), male genital plate is rather short and fused with the bases of its styles (Figs 172, 176), male genitalia are membranous, and ovipositor is short and strongly curved upwards (Figs 67, 199). The genus is divided into 3 subgenera diagnosed below, in a key for these subgenera.

A key for subgenera of the genus *Pycnopalpa*

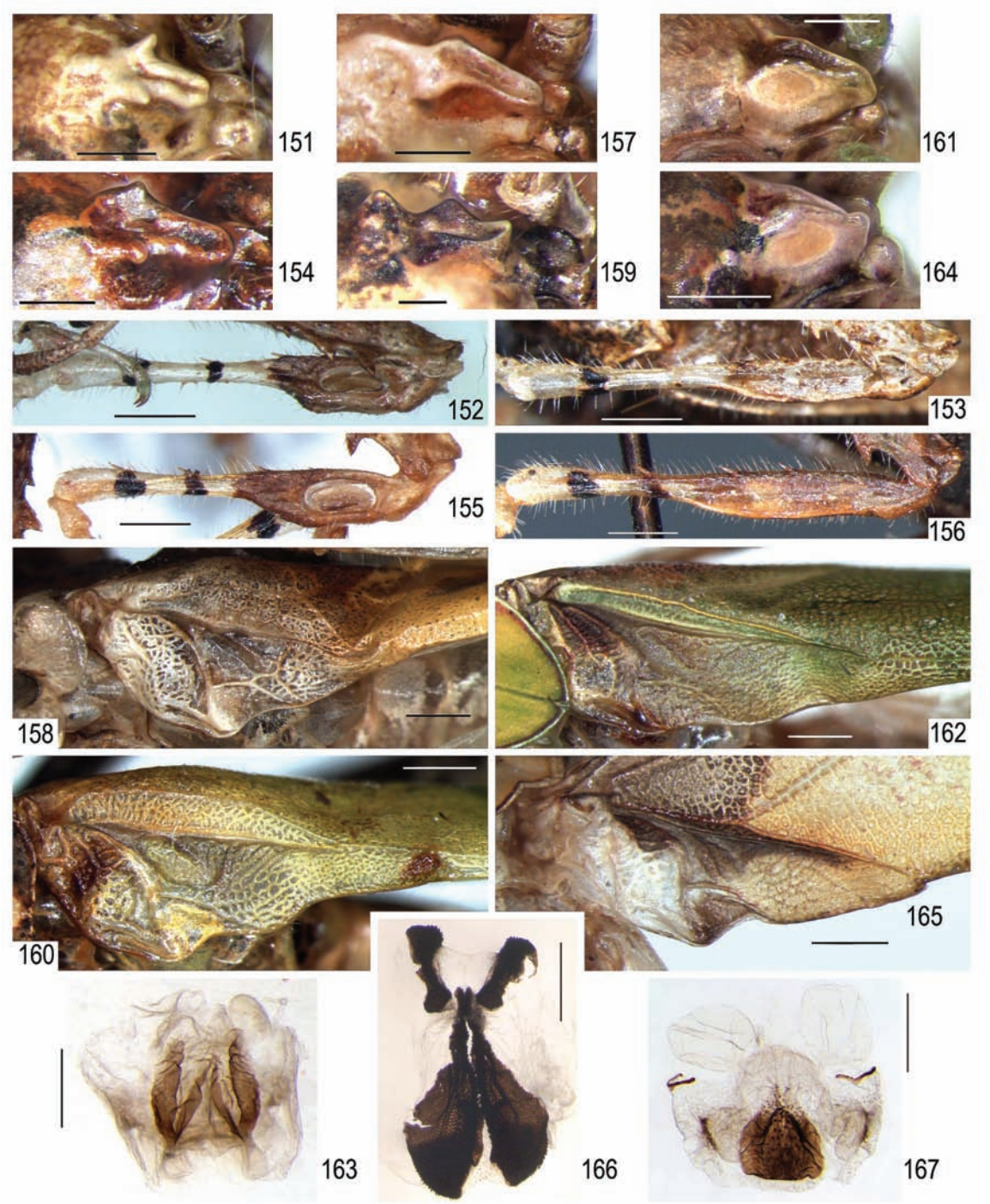
1. Shape of upper rostral tubercle of head, structure of pronotal disc and size of spines on fore femur rather diverse. Tegmen wide in middle part and with transparent or semitransparent areas not contacting with its anal edge (Figs 26, 28–31). Styles of male genital plate compressed laterally (Figs 168, 170) 2
– Upper rostral tubercle of head with a pair of small denticle-like convexities above lateral ocelli and with distinct denticle behind them (Fig. 159); pronotal disc with 2 smooth areas different from rest of pronotum in color and connected with each other by narrow stripe (anterior smooth area rather small, distinctly narrower than posterior one; Fig. 15); fore femur with 4 large lamellar spines on ventral inner keel (2 distal spines with fused bases). Tegmen narrow in middle part and with transparent areas contacting with its anal edge (Fig. 32). Styles of male genital plate almost cylindrical (Fig. 174) . . . . . **subgenus *Gracisoria* subgen. nov.** [Etymology: this name originates from the Latin word "gracilis" (slender) and former genus *Soria*. Included species: *P.* (*G.*) *gracilenta* sp. nov. (type species)].
2. Upper rostral tubercle of head with a pair of denticles above lateral ocelli and with slight denticle or rounded convexity behind them (Figs 151, 154); pronotal disc with 2 large smooth and flat areas different from rest of pronotum in color and with very narrow groove between them (Figs 5–14); fore femur with 3 large lamellar spines on ventral inner keel (2 distal spines with fused bases). Tegmen with comparatively small transparent spots (Figs 26, 28–30) . . . . . **subgenus *Pycnopalpa* s. str.** [Included species: type species of the genus; *P.* (*P.*) *porphyretica* sp. nov.; possibly, some above-mentioned names, proposed for variations of *P. bicordata* or synonymized with the latter name, may belong to separate species of this subgenus.]
– Upper rostral tubercle of head without denticles above lateral ocelli and with rounded convexity behind them (Fig. 157); pronotal disc with anterior smooth area deeply concave, with posterior smooth area small or undeveloped, and with groove between them not very narrow and sometimes reaching only middle (but not posterior) part of disc (these smooth areas different from rest of pronotum in color or of same color; Figs 16–19); fore femur with a single large lamellar spine in distal part of ventral inner keel. Tegmen with large semitransparent areas (Fig. 31) . . . . . **subgenus *Vitrosoria* subgen. nov.** [Etymology: this name originates from the Latin word "vitrum" (glass) and former genus *Soria*. Included species: *P. angusticordata* Vignon, 1924; *P.* (*V.*) *occidentalis* sp. nov. (type species).]

Pycnopalpa ?bicordata (Saint-Fargeau et Audinet-Serville, 1825)

(Figs 5–12, 26–29, 151–153, 168, 169)

Material studied. MEXICO: 1 male, Chiapas State, 130 km NW of Tapachula Town, environs of Ejido Las Golondrinus near El Triunfo Reserve, 800–1000 m, secondary forest, on leaf of tree at night, 13–17 May 2006, A. Gorochov, M. Berezin coll.; 1 male, same state, Ocosingo Distr., Selva Lacandona near Guatemala (between Montes Azules Reserve and Bonampak Natural Monument), environs of Lacanja-Chansayab Vill., primary forest, at night, 20–27 May 2007, M. Berezin, E. Tkatsheva coll.; 1 male, Veracruz State, 15–20 km NE of Catemaco Town, Los Tuxtlas (biostation of Mexico University) in 2 km from Mexican Gulf, rainforest on hills, at light, 6–17 November 2006, A. Gorochov, A. Ovtshinnikov coll. HONDURAS: 1 male, Cerro Azul Meambar National Park, "121, Comayagua", 14°52′18′′N, 87°54′18′′W, 785 m, 7–14 Jule 2013, A. Pushenkov coll.; 1 male, Pico Bonito National Park, "120, Atlantida", 15°42′07′′N, 86°50′49′′W, 210 m, 15–21 Jule 2013, A. Pushenkov coll. ECUADOR: 4 males and 1 female, Pichincha Prov., Rio Pachijal, Los Bancos, 0°4′6′′N, 78°54′17′′W, 928 m, 29 October 2011, V. Sinyaev, O. Romanov coll.

Note. This material consists of 3 subspecies or very similar close-related species. However, determination of these taxa is now impossible, as there are 5 names given similar insects with undescribed and not illustrated morphological structures allowing me to separate these taxa from each other: *P. bicordata* described from southern Brazil; *Soria contaminata* Walker, 1869 described from "Brazil" (Walker 1869) and synonymized with *P. bicordata* by Kirby (1906); *P. mortuifolia* Rehn, 1903 described from Mexico



Figs 151–167. Phaneropterinae: 151–153 – *Pycnopalpa ?bicordata* (S.-Farg. et A.-Serv.), subsp. 1; 154–156 – *P. porphyretica* sp. nov.; 157, 158 – *P. occidentalis* sp. nov.; 159, 160 – *P. gracilenta* sp. nov.; 161 – *Hetaira angusta* sp. nov.; 162, 163 – *H. ?smaragdina* Br.-W.; 164–166 – *H. morona* sp. nov.; 167 – *H. aurigera* Rehn. Upper rostral tubercle of head from side and slightly above (151, 154, 157, 159, 161, 164); fore tibia of female, inner view (152, 155); middle tibia of female, outer view (153, 156); dorsal field of right male tegmen (158, 160, 162, 165); male genitalia from above (164, 167, in usual position; 166, with smaller dorsal lobes reversed and directed forwards). Scale bars: 0.5 mm for Figs 151, 154, 157, 159, 161, 163, 164, 166, 167; 1 mm for Figs 152, 153, 155, 156, 158, 160, 162, 165.

(Veracruz) and synonymized with *P. bicordata* by Hebard (1927); *P. bicordata* var. *morata* Vignon, 1930 described from Mexico; and *P. bicordata* var. *permaculata* Vignon, 1930 from Costa Rica.

Subspecies 1. Specimens from Ecuador have the pronotal disc with a moderately low anteromedian denticle, green smooth areas (often these areas are partly or completely yellowish; but possibly, yellowish color appears only in some dry specimens), and rather long (wide) ridges with rough surfaces located at the middle of this disc and separating the anterior smooth area from the posterior one (Figs 5–8).

Subspecies 2. Mexican specimens from Veracruz State and from "Selva Lacandona" of Chiapas State, and specimens from Honduras are very similar to the previous subspecies but distinguished by a somewhat higher anteromedian denticle of the pronotal disc and clearly shorter (narrower) ridges of this disc separating the smooth areas from each other (Figs 9, 10) (one male from Honduras is with brown smooth pronotal areas; possibly, this color is a result of rotting).

Subspecies 3. A male from environs of Tapachula Town (Mexico: Chiapas State) is similar to males of the subspecies 2, but it has the tegmina slightly wider than in males of the both previous subspecies (for comparison see Figs 26 and 28), pronotal disc almost without anteromedian denticle (as in holotype of *P. bicordata*, judging by a photograph from Eades et al. 2013) but with a long whitish median stripe in anterior part of the anterior smooth area (this stripe is distinctly longer than in the both previous subspecies; Figs 11, 12), and color of smooth pronotal areas yellowish (possibly, it was green in living specimen).

Pycnopalpa (*Pycnopalpa*) *porphyretica* sp. nov.
(Figs 13, 14, 30, 67, 154–156, 178)

Etymology. The species name is the Latin word of Greek origin: "porphyretica" (purple).

Type material. Holotype – female, BOLIVIA: "Bolivia, Rolle 1904".

Description. *Female*. General appearance very similar to that of *P. ?bicordata* but with some differences: body clearly larger; coloration of most part of body greyish brown with light brown proximal part of antennal flagellum (its other parts missing), dark red smooth areas on pronotal disc, light yellowish brown rest of this disc (Fig. 14), yellowish distal half of fore tibia and distal third of middle tibia (light parts of these tibiae having two rather small dark brown transverse bands) as well as all tarsi; coloration of tegmen yellowish green with 2 brown areas along costal edge, 2 moderately large spots having transparent membranes and brownish net from veinlets (subapical spot smaller than middle one; both spots outlined by brownish stripe), and light brown some transverse veinlets in dorsal field; coloration of hind wing transparent with greenish apical part having brown stripe along costal edge and rather small dark brown spot near this stripe (Fig. 30); structure of body typical of this subgenus, however upper rostral tubercle with very small denticles above lateral ocelli and rounded convexity behind them (Fig. 154), anteromedian denticle of pronotal disc almost undeveloped (Fig. 13), middle ridges of this disc (separated 2 smooth areas from each other) short (narrow) (Fig. 14), widened part of fore and middle tibiae long (in fore tibia, this part almost equal to half of tibia in length, but in middle tibia, it distinctly longer than half of this tibia; Figs 155, 156), and ovipositor and genital plate as in Figs. 67, 178.

Male unknown.

Length (mm). Body 17; body with wings 31; pronotum 4; tegmina 25; hind femora 14; ovipositor 5.

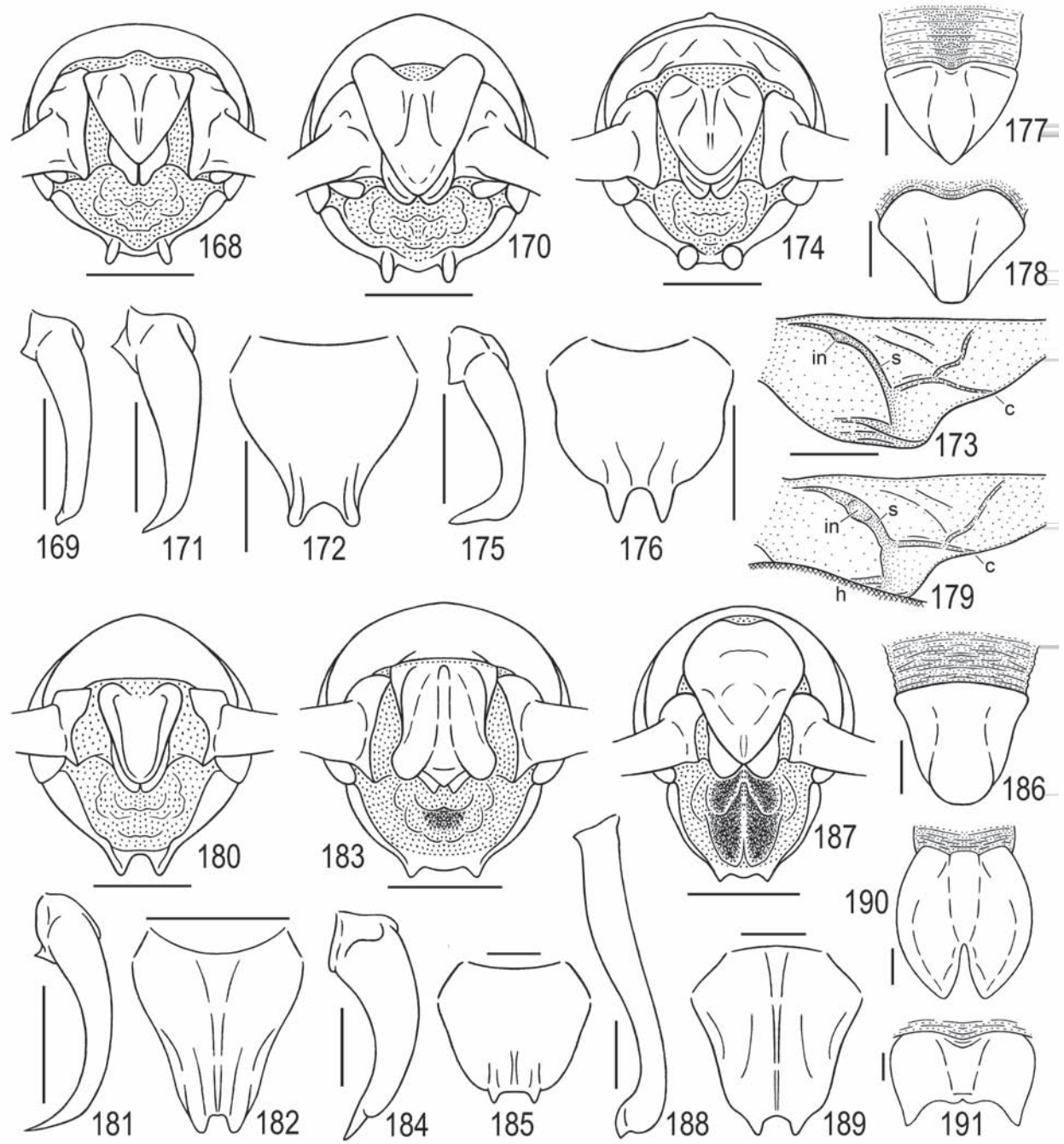
Comparison. The new species is distinguished from *P. bicordata* and other possible representatives of this subgenus (similar to the latter species) by clearly larger body, dark red smooth areas of the pronotal disc, and longer widened part of fore and middle tibiae (*vs.* this tibial part is distinctly shorter than half of tibia in fore leg and almost as long as half of tibia in middle leg; for comparison see Figs 152, 153 and 155, 156).

Pycnopalpa (*Vitrosoria*) *occidentalis* sp. nov.
(Figs 16–18, 31, 157, 158, 170–173)

Etymology. The species name is the Latin word "occidentalis" (western).

Type material. Holotype – male, PERU: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Paratypes: 1 male, same data as for holotype; 1 male, same department and province, garden-forest very near Satipo Town, ~600 m, at light, 15 October–6 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.



Figs 168–191. Phaneropterinae: 168, 169 – *Pycnopalpa ?bicordata* (S.-Farg. et A.-Serv.), subsp. 1; 170–173 – *P. occidentalis* sp. nov.; 174–177 – *P. gracilenta* sp. nov.; 178 – *P. porphyretica* sp. nov.; 179 – *P. angusticordata* Vignon; 180–182 – *Hetaira ?smaragdina* Br.-W.; 183–186 – *H. aurigera* (Rehn); 187–189 – *H. morona* sp. nov.; 190 – *H. angusta* sp. nov.; 191 – *Euceraia varia* sp. nov. Male abdominal apex from behind (168, 170, 174, 180, 183, 187); male cercus, ventral (169, 171, 175, 181), dorsomedial (184) and ventromedial (188) views; male genital plate from below (172, 176, 182, 185, 189); some structures of stridulatory apparatus in male right tegmen, schematically (173, 179); female genital plate from below (177, 178, 186, 190, 191). Scale bars: 1 mm for Figs 168–176, 180–183, 187; 0.5 mm for Figs 177, 178, 184–186, 188–191. Abbreviations: c – chords; h – hind wing; in – small inflation of CuP vein; s – part of CuP homologous to stridulatory vein of left tegmen. [179 – after photograph from Eades et al. 2013].

Description. *Male* (holotype). General appearance similar to that of *P. angusticordata*. Colouration of body variegate but rather light: head cream-coloured with sparse small brownish spots on antennal flagellum; pronotum also cream-coloured but with light brown middle and lower parts of lateral lobes as well as with a few darkish dots along anterior edge of these lobes and dark brown dots along posterior edge of these lobes; tegmina yellowish with greenish tinge and also with yellowish white venation and transparent membranes in dorsal field, light brown proximal part of lateral field, greyish brown marks near tegminal apex, greyish white band along distal half of costal edge, two very large semitransparent (greyish-whitish) spots in lateral field, transparent band along proximal half of costal edge, and two large semitransparent (yellowish-greenish) areas between previous semitransparent spots and between these spots and proximal part of tegmen (these areas slightly more transparent than these spots and looking as darker parts in Fig. 31); hind wings transparent with semitransparent most part of venation and yellowish (almost greenish) subapical part having whitish grey stripe along costal edge and moderately large greyish brown spot near it; legs whitish with light brown coxa and trochanter, proximal part of middle femur, a few marks on proximal half of hind femur, and spots on distal part of middle tibia and on proximal part of hind tibia, with 3 dark brown transverse bands on fore femur and a few small marks on dorsal surface of middle femur, and with brown spots on dorsal part of hind femur (one spot at middle of this part, and 2 spots in its distal part) and on rest part of hind tibia; pterothorax light brown with whitish dorsum; abdomen cream-coloured with yellowish last tergite, light brownish proximal half and apical part of cercus, and light greyish genital plate. Head with upper rostral tubercle lacking denticles above lateral ocelli and having rounded (in profile) convexity behind them (Fig. 157). Pronotum with rather deep anteromedian notch and a pair of strongly convex posterolateral lobes, with anterior smooth area of disc deeply concave and having rather large rounded anteromedian tubercle, without posterior smooth area of disc (median groove, running from anterior smooth area, finished near middle of disc, and posteromedin keel of disc rather long but almost indistinct; Figs 16–18). Tegmina and their stridulatory apparatus as in Figs 31, 158; structure of hind wing somewhat similar to that of *P. ?bicordata* (see Fig. 27). Fore femur with only one lamellar and rather low spine on inner ventral keel (no any additional spinule on basal part of this spine); proximal widened part of middle tibia slightly shorter than half of this tibia. Last abdominal tergite simple; epiproct large, triangularly oval, with 2 rather large posterolateral lobes (Fig. 170); cercus simple, weakly curved but with hook-like apex (Fig. 171); genital plate rather short, with narrower distal part having distinct posteromedian notch and moderately short and laterally compressed styles fused with this plate (Figs 170, 172).

Variations. Shape of semitransparent and some other spots in tegmina very slightly varied; one of paratypes with clearly darker and more distinct anterior dots on lateral lobes of pronotum.

Female unknown.

Length (mm). Body 15–17; body with wings 30–32; pronotum 3.5–3.8; tegmina 24.3 – 25.7; hind femora 13–14.

Comparison. The new species differs from *P. angusticordata* in the posterior half of pronotal disc lacking any smooth area but having traces of longer posteromedian keel (in *P. angusticordata*, this half has a distinct heart-like and darker smooth area, and its posteromedian keel is shorter and well developed; for comparison see Figs 16–18 and 19), and in the tegminal stridulatory apparatus with slightly thinner stridulatory vein in left tegmen and clearly thinner homologous vein in right tegmen (a small inflation of the latter vein in *P. occidentalis* is situated more far from chords than in *P. angusticordata*; see Figs 173 and 179).

Pycnopalpa (*Gracisoria*) *gracilenta* sp. nov.

(Figs 15, 32, 159, 160, 174–177)

Etymology. The species name is the Latin word "gracilenta" (thin).

Type material. Holotype – male, PERU: Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.

Paratypes: 1 female, same data as for holotype; 1 female, same department and province, ~40 km NE of Satipo Town, environs of Calabaza Vill., ~2000 m, partly primary / partly secondary forest, at light, 16–17 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 1 male, same

department, environs of Mariposa Vill., 11°24.9′S, 74°43.7′W, 1637 m, 14–16 December 2010, V. Sinyaev, S. Sinyaeva, V. Izersky coll.

Description. *Male* (holotype). Coloration of body variegate, with following pattern: head yellowish with brown wide longitudinal band on dorsum, a pair of narrow longitudinal stripes behind eyes, and most part of rostral region, with light brown genae having rose tinge, with dark brown spot on ventral part of scape and small sparse spots on antennal flagellum, with blackish very numerous (dense) small dots under antennal cavities and on upper part of clypeus as well as a few small spots on palpi, and with rose labrum; pronotum light brown with characteristic yellowish area on disc (Fig. 15), dark brown longitudinal band in middle part of lateral lobes, and yellowish lower part of these lobes having brown spot behind its middle; tegmina yellowish green with semitransparent greyish costal area (but its distal part light brown), a few small dark brown spots near this light brown part, two transparent areas along anal edge (long and short ones) outlined by light brown stripe and having a few additional small light brown marks, brown stridulatory vein in right tegmen and spot near base of dorsal field in both tegmina, small light brownish spot in distal part of this field, and semitransparent yellowish membranes of stridulatory apparatus (Figs 32, 160); hind wings transparent with subapical part yellowish green and having light brown costal stripe; fore femur with dark brown most part of inner half, light brown distal part, and brown and yellowish spots in rest part; middle femur similar to fore one in colouration but with less contrast pattern; hind femur yellowish with light brown proximal third of outer surface, brown dorsal part of proximal third having a few whitish marks, and two rather small light brown areas in distal third; tibiae and tarsi yellowish with proximal third / half light brown and two dark brown distal marks in fore and middle tibiae, and with light brown proximal and distal areas in hind tibia; pterothorax light brown with yellowish dorsal part and venter, and with yellowish white large area on lateral surfaces and a few smaller spots around this area; abdomen yellowish with light brown sternites, cerci and distal part of genital plate. Upper rostral tubercle of head with small angular projection above each lateral ocellus and distinct denticle behind these ocelli (Fig. 159); pronotum more or less similar to that of *Vitrosoria* in shape but with more flat disc, having low anteromedian convexity (looking almost as short longitudinal keel) only, and with very small posteromedian notch (Fig. 15). Tegmina and their stridulatory apparatus as in Figs 32, 160; hind wings also rather similar to those of *Vitrosoria* in structure. Middle femur with 6–7 outer flattened spines on ventral keel; middle tibia with widened part somewhat longer than half of this tibia; distal part of hind tibia somewhat widened dorsally. Each of two last abdominal tergites with small median tubercle on very short posteromedian projection; epiproct with proximal lobes as in Fig. 174; cerci simple, with strongly hooked distal part having elongate apical spine (Fig. 175); genital plate with rather small conical styles situated near each other and fused with this plate (Figs 174, 176).

Variations. Second male with barely darker coloration (labrum brown; yellowish lower part of pronotal lobes with two darkened areas), less numerous spines (4) on ventral outer keel of middle femur, insignificantly larger posteromedian projection of two last abdominal tergites, slightly higher median tubercles on these projections, and somewhat wider space between styles of genital plate.

Female. General appearance as in male, but labrum in one of females yellowish, dorsal tegminal area yellowish green with brown subbasal spot only, epiproct smaller and without proximal lobes, cerci elongately conical and with thin distal part, and shape of ovipositor and genital plate as in Figs 177, 199.

Length (mm). Body; male 13–14, female 14–15; body with wings: male 31–32, female 32–33; pronotum: male 3.2–3.3, female 3.2–3.5; tegmina: male 24–25, female 26–27; hind femora: male 15–16, female 16–17; ovipositor 5.8–6.

Comparison. The subgenus *Gracisoria* includes only a single species distinguished from all the other congeners by the characters mentioned above, in the key to *Pycnopalpa* subgenera.

Genus *Hetaira* Brunner-Wattenwyl, 1891

Type species: *Hetaira smaragdina* Brunner-Wattenwyl, 1891, by monotypy.

Note. This genus was described for a single species from southern Brazil (Brunner-Wattenwyl 1891). It is related to *Pycnopalpa*, as these genera have smooth areas on the pronotal disc outlined by the not smooth parts (Figs 5–19, 34, 36, 37). In *Hetaira*, these smooth areas are fused and occupying the almost whole disc, and the not smooth parts of disc are reduced up to

narrow and low (but distinct) keels along almost all the edges of disc (Figs 34, 36, 37); it is useful to note that the lateral keels are characteristically interrupted in the anterior half in all the studied species of this genus. *Hetaira* and *Pycnopalpa* have also the additional similarities: male epiproct in some species is with distinct lateroproximal lobes (Figs 168, 170, 174, 180, 187); male cerci are simple, more or less hooked distally (Figs 169, 171, 175, 181, 184, 188); male genital plate is rather short and fused with short styles (Figs 172, 176, 182, 185, 189); ovipositor short and strongly curved (Figs 67, 68, 199). Relationship of these genera to the other genera from "genus group Turpiliae" (Eades et al. 2013) is not evident excepting only *Topana* Walker, 1869. The latter genus is similar to *Hetaira* and *Pycnopalpa*; however, it clearly differs from them in simple structure of pronotal disc as well as in the last abdominal tergite of male with a rather long and more or less triangular posteromedian projection strongly curved downwards (*vs.* without any posteromedian projection). There are some species included in *Topana* but having different structure of the both pronotum and abdomen (Eades et al. 2013); most probably, they belong to *Atopana* Vignon, 1930 originally described as a genus but considered here as a subgenus of *Hetaira*. Differences between subgenera of this genus and their composition are given below, in a key for subgenera of *Hetaira*.

A key for subgenera of the genus *Hetaira*

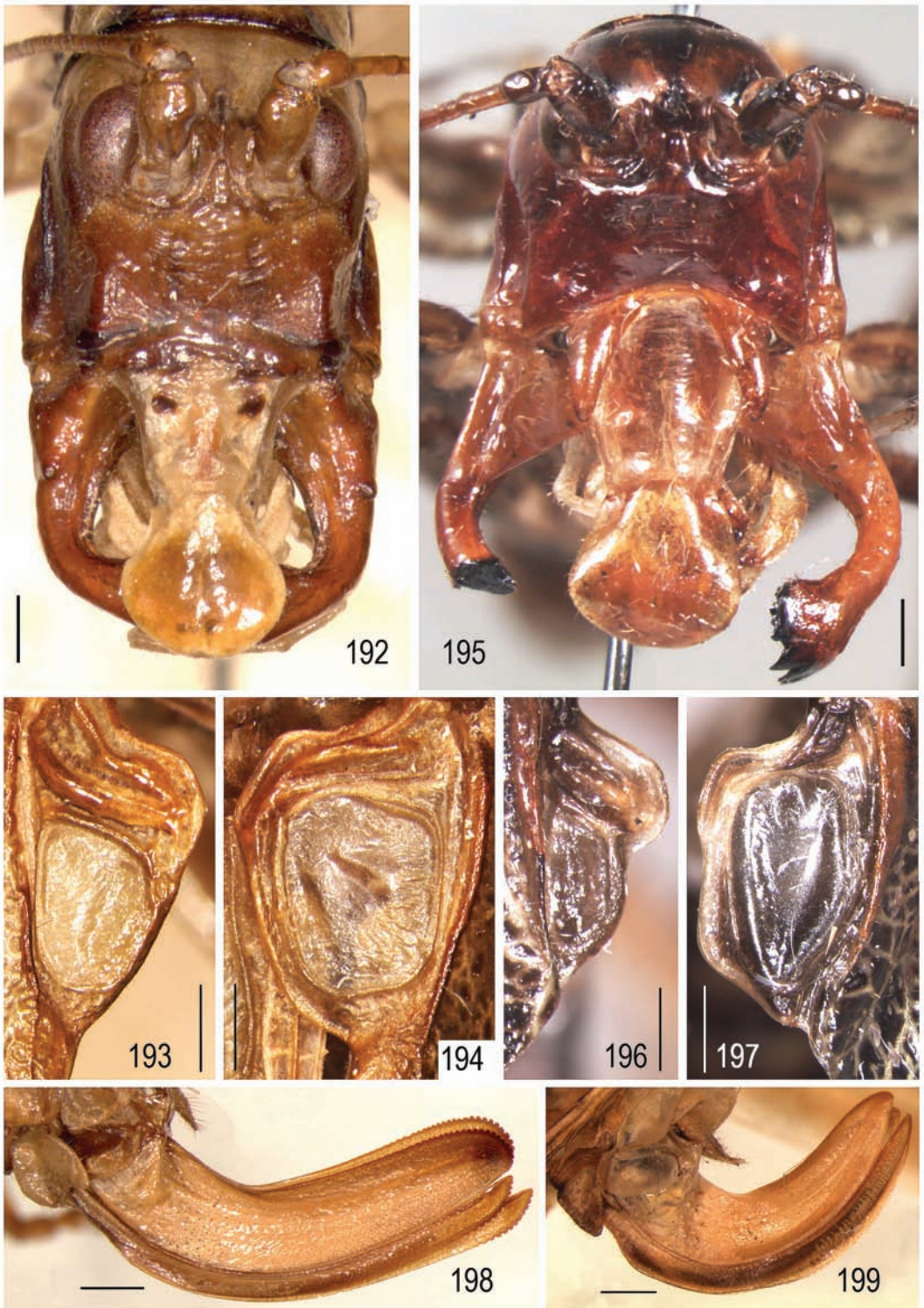
1. Pronotal disc 2–2.5 times as long as wide (Figs 34, 36). Dark spot in distal half of tegminal lateral field near anal edge rather small, separated from this edge by lighter area, and in both sexes without distinct lighter central part (Figs 33, 35). Male genitalia almost completely membranous (Fig. 163) . . . . . **subgenus *Hetaira* s. str.** [Included species: type species of the genus; *H.* (*H.*) *angusta* sp. nov.]
– Pronotal disc 1.4–1.6 times as long as wide (Fig. 37). Dark spot in distal half of tegminal lateral field near anal edge rather large, touching this edge in male (Fig. 38) and sometimes in female, and usually with distinct lighter central part in female. Male genitalia with some membranes almost sclerotized and having numerous very small but distinct denticles (Figs 166, 167) (however, in some representatives including type species of this subgenus, male genitalia unstudied) . . . . . **subgenus *Atopana* Vignon, 1930, stat. nov.** [Included species: *Topana varia* Walker, 1869 (type species), by original designation; *T. aurigera* Rehn, 1918; *T. cornuta* Uvarov, 1925; *H.* (*A.*) *morona* sp. nov.; probably also *T. postica* Walker, 1869 and *T. rubiginosa* Bruner, 1915.]

***Hetaira* (*Hetaira*) *angusta* sp. nov.**
(Figs 33, 34, 68, 161, 190)

Etymology. The species name is the Latin word "angusta" (narrow).

Type material. Holotype – female, PERU: Cusco Department, 7 km NE of Mandor, 13°18.7′S, 70°49.5′W, 890 m, 1–3 December 2010, V. Sinyaev, S. Sinyaeva, Yu. Bezverkhov coll.

Description. *Female*. Body rather thin. Colouration greenish with following marks: head and pronotum almost yellowish white with brown eyes, greenish pedicel, distal half of scape, and labrum, light brown a pair of vertical stripes under eyes and dorsal median stripe on upper rostral tubercle, yellow most part of pronotal disc but with greenish posterior part (Fig. 34) (possibly in living specimens, this disc almost completely green), and brown areas on maxillary palpi and sparse dots on lateral pronotal lobes along their anterior and posterior edges; tegmina with two longitudinal stripes (greyish brown one along costal edge, and yellowish one situated near it and having a few short reddish transverse stripes; above-mentioned greyish brown stripe widened at basal part and with longitudinal whitish spot at middle of this widened part), brown most part of left dorsal field and proximal half of right dorsal field, dark brown rather small spot in distal half (near anal edge) and a few distinctly smaller marks on other parts of lateral field, and brownish stripe along distoanal edge of tegmen (Fig. 33); hind wings transparent with greenish apical part outlined along costal edge by rather wide brown stripe and along distoanal edge of this lobe by narrow light brown stripe; legs almost uniformly yellowish white but with greenish tinge and light brownish dorsal area in proximal third of hind femur; abdomen yellowish with light brown ovipositor and genital plate. Upper rostral tubercle of head narrow, with rounded convexity in region of lateral ocelli, with narrow dorsomedian groove, and without unpaired denticle or rounded convexity behind lateral ocelli (Fig. 161); pronotum long and laterally compressed, with disc 2.5 times as long as wide and clearly narrowing to head (but its hind part almost roundly angular; Fig. 34), and with lateral lobes slightly longer than high. Tegmina long and



Figs 192–199. Pleminiinae and Phaneropterinae: 192–194 – *Gnathoclita peruviana* Carl; 195–197 – *G. anostostoma* Gor.; 198 – *Euceraia varia* sp. nov.; 199 – *Pycnopalpa gracilenta* sp. nov. Male head in front (192, 195); stridulatory apparatus in left (193, 196) and right (194, 197) tegmina of male; ovipositor from side (198, 199). [195–197 – after Gorochov 2012b]. Scale bars: 1 mm.

narrow, distinctly narrowing to base (their structure as in Fig. 33); hind wings with apical part of costal lobe also rather narrow, and with apical fan clearly smaller than in *Pycnopalpa*. Legs with 3–4 rather small spines on distal half of inner ventral keel in fore tibia and of outer ventral keel in middle tibia; middle tibia also with proximal widened part rather narrow and not reaching middle of tibia. Abdomen without visible tubercles on tergites, with disc-like genital plate having deep posteromedian notch (Fig. 190), and with ovipositor as in Fig. 68.

Male unknown.

Length (mm). Body 15; body with wings 30; pronotum 4.8; tegmina 24; hind femora 19; ovipositor 5.

Comparison. The new species differs from *H. smaragdina* in clearly narrower tegmen of female (in female of the latter species, tegmen is 2.8 times as long as wide, but in the new one, it is 3.2 times as long as wide) with dark spot in distal half situated very near anal edge (in female of *H. smaragdina*, this spot is located distinctly more far from anal edge of tegmen; Eades et al. 2013).

Hetaira* (*Hetaira*) *?smaragdina
Brunner-Wattenwyl, 1891
(Figs 35, 36, 162, 163, 180–182)

Material studied. PERU: 1 male, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll.; 1 male, same department and province, environs of Mariposa Vill., 11°24.9′S. 74°43.7′W, 1637 m, 14–16 December 2010, V. Sinyaev, S. Sinyaeva, V. Izersky coll. ECUADOR: 1 male, 8 km SW of Zamora Town, Podocarpus National Park, forest near Rio Bambuscaro, 800 m, December 2005, A. Ovtshinnikov, D. Smolnikov coll.

Note. These males have tegmen almost equal to that of female of this species in the shape and colouration (Fig. 35). The other structures of bodyparts are similar to those of *H. angusta*, but their pronotal disc is slightly wider (it is approximately 2 times as long as wide; Fig. 36), and dorsal tegminal field is with short and thick dark brown stridulatory vein, 2 brown spots around it and on dorsal field of right tegmen. Stridulatory apparatus in right tegmen is somewhat reduced (no distinct traces of mirror; Fig. 162), and abdominal apex as in Figs 180–182; also it is necessity to note that a male from environs of Mariposa Vill. is with a small whitish anteromedian tubercle (absent in other males) on the pronotal disc (Fig. 36), and this specimen and a male from Ecuador have slightly wider space between styles of genital plate and a very small median projection between them. This species is possibly recorded from Peru and Ecuador for the first time.

***Hetaira* (*Atopana*) *morona* sp. nov.**
(Figs 37, 38, 164–166, 187–189)

Etymology. This name is given after Morona River.

Type material. Holotype – male, ECUADOR: Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., 300 m, primary forest, at light, 5–15 January 2010, A. Gorochov coll.

Description. *Male*. Body smaller than in *H. angusta* and looking somewhat shorter. Colouration yellowish with following pattern: head with light greyish median part of face and areas behind eyes, whitish rostral region, brownish grey eyes and rest of head dorsum, light brown clypeus, and dark brown numerous dots (punctures) under rostrum and antennal cavities as well as small sparse spots on antennal flagellum; pronotum with yellowish disc (smooth part of disc), brown line along posterior edge of disc, whitish keels around disc (Fig. 37), and grey lateral lobes having numerous blackish dots; tegmina yellowish with greenish tinge as well as with 3 large brown spots on lateral field, dark brown distal half of dorsal field in left tegmen, whitish proximal half of dorsal field in both tegmina and distal half of this field in right tegmen (but also with two brown areas near middle of this field in latter tegmen; Figs 38, 165); hind wings transparent with yellowish apical part of costal lobe having a few small brown spots near costal edge (these spots connected with each other by brown line running along costal edge); other bodyparts with rather numerous dark dots and small marks on legs (these dots especially dense on outer surface of basal third of hind femur) and on lateral surfaces of pterothorax and abdominal tergites, but hind tibia additionally with dark both long longitudinal line on dorsal surface and longitudinal stripe on distal part of each lateral (outer and inner) surface, and cerci almost completely light brown. Upper rostral tubercle of head more or less similar to that of *H. angusta* but

with apical part smaller and region of lateral ocelli larger (Fig. 164); pronotum with disc 1.6 times as long as wide and having posterior part roundly convex (Fig. 37), and with lateral lobes slightly longer than high. Shape of tegmina and structure of stridulatory apparatus as in Figs 38, 165; hind wings similar to those of *H. angusta* but with apical part of costal lobe somewhat wider and apical fan slightly more convex (almost as in Fig. 27). Legs and abdomen similar to those of *H. ?smaragdina*, but epiproct with lateroproximal lobes more or less obliquely truncated (Fig. 187), cerci longer and with almost disc-like widening at apex (Fig. 188), genital plate with styles very small and strongly flattened (looking as angular projections; Fig. 189), and genitalia with majority of membranes more or less sclerotized and having very numerous denticles (Fig. 166).

Female unknown.

Length (mm). Body 13.5; body with wings 26; pronotum 3.7; tegmina 19; hind femora 12.

Comparison. The new species is clearly distinguished from majority of species belonging or possibly belonging to the subgenus *Atopana* by the male cerci with a disc-like widening at the apex (*vs.* with more or less spine-like apical part). From *H. varia* comb. nov. as well as from *H. cornuta* comb. nov., it differs in the tegmina distinctly widened in distal half (*vs.* with almost parallel costal and anal edges); and from *?H. rubiginosa* possibly also belonging to *Atopana*, in the pronotum clearly longer and with almost straight lateral keels of disc, in the tegmina shorter, and in the hind femora with distinctly lighter basal third.

Hetaira (*Atopana*) *aurigera* (Rehn, 1918), comb. nov.

(Figs 167, 183–186)

Material studied. PERU: 3 males and 3 females, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, at light, 20–23 October 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izersky coll. BOLIVIA: 1 female, "Bolivia, Rolle 1904".

Note. This species was described from Junin Department of Peru in the genus *Topana* (Rehn 1918). The above-listed specimens are in accordance with the original description and photographs of holotype of this species (Eades et al. 2013), but their pronotum and male abdominal apex (including genitalia; Fig. 167) clearly show that this species belongs to the subgenus *Atopana* of the genus *Hetaira*. From *H. morona* similar in the general appearance, *H. aurigera* differs in the male epiproct almost lacking lateroproximal lobes but having a pair of distal lobes directed aside, male cerci with spine-like distal part, and male genitalia with a rather small semisclerotized plate having moderately numerous denticles (Figs 167, 183, 184); female of *H. aurigera* is with a distinct lighter central part of the large dark spot in distal half of tegmen near anal edge, a few additional small darkened spots in lateral tegminal field, and rather narrow genital plate divided into two parts by a transverse fold (anterior part of this plate is membranous and somewhat darker than posterior one; Fig. 186).

Subfamily Pleminiinae Brunner-Wattenwyl, 1895

Note. In one of the previous communications of this series (Gorochov 2012a), the remarks on classification of the former subfamily Pseudophyllinae was made. These remarks included brief information about division of Pseudophyllinae s. l. into 5 subfamilies grounded near 20 years ago (Gorochov 1988, 1995). However, the above-mentioned remarks just drew criticism from one of the authors of Orthoptera Species File (Braun in Eades et al. 2013).

He wrote: "According to Gorochov 2012a [Pleminiinae – A.G.] solely [sic!] characterized by 'tympana' (actually referring to the tympanal openings) situated near each other on the flat part of the dorsal surface of the fore tibia. This is not true for Aphractini with unconcealed tympana (Beier 1962); and within Homalaspidini (of which the name Glaphyraspidini is a synonym) in the genus *Disceratus* the tympanal openings are situated laterally on the tibiae (pers. obs.)".

It is necessary to indicate that the first sentence of this criticism is not in accordance to reality. In the paper cited, Gorochov (2012a: p. 3) wrote: "These subfamilies are well distinguished from each other mainly [sic!] by the characteristic structure of tympanal organs. There are also some important differences in the structure of male tegminal stridulatory apparatus and venation of hind wings (Gorochov 1995)".

Probably Braun cannot find time to read the complete text of Gorochov's short introduction as well as a book on system and evolution of Ensifera cited (Gorochov 1995); in the latter book, all the distinct diagnostic characters founded for Pleminiinae and other subfamilies were named and illustrated. Also

it would be useful to think: strong similarity in the structure of tympanal organs in numerous species from different tribes of Pseudophyllinae s. l. is their synapomorphy, or it is a result of parallel evolution in different tribes? And if one can believe that it is a synapomorphy, what is a reason that this synapomorphy cannot be base for the subfamily establishing?

Another part of Braun's criticism applies to inclusion of some species with opened tympanal membranes as well as with lateral tympanal slits in the Pleminiinae which is characterized by these slits situated on the dorsal surface of fore tibia. However, Gorochov wrote that Pleminiinae is characterized but not diagnosed by the latter tympanal organ, i. e. such organ is developed in overwhelming majority of these katydids (but not in all); in the following paper, Gorochov (2012b) included in Pleminiinae a species with the lateral tympanal slits (*Gnathoclita anostostoma* Gorochov, 2012). Lateral position of tympanal slits is probably a result of secondary modification (partial reduction of tympanal organ), because some other species of *Gnathoclita* Hagenbach, 1841 have the tympanal organ typical of Pleminiinae. The group of species with opened tympanal membranes might lose lateral lobes of their tympanal organ (a similar loss probably had place in the tribe Calimenellini from Pseudophyllinae s. str.), or this group may be a primitive tribe of Pleminiinae originally having its tympanal membranes opened. This group (Aphractini) is in need of an additional study (as many other tribes), but in accordance to its other known characters, it may be included in Pleminiinae under question.

Nevertheless, I shall be grateful for criticism of my real mistakes, because I am not free from them. For example, I erroneously described the subgenus *Tettohenicus* Gorochov, 2012, syn. nov. which is a synonym of *Disceratus* Scudder, 1869. However, this mistake is partly based on erroneous inclusion of two subgenera of the same genus (*Gnathoclita*) in different tribes by Beier (1960, 1963). This is an additional evidence of unsatisfactory situation with tribal classification in Pleminiinae and of impossibility to use such classification in the recent study.

Genus *Gnathoclita* Haan, 1842

Type species: *Gryllus vorax* Stoll, 1813, by monotypy.

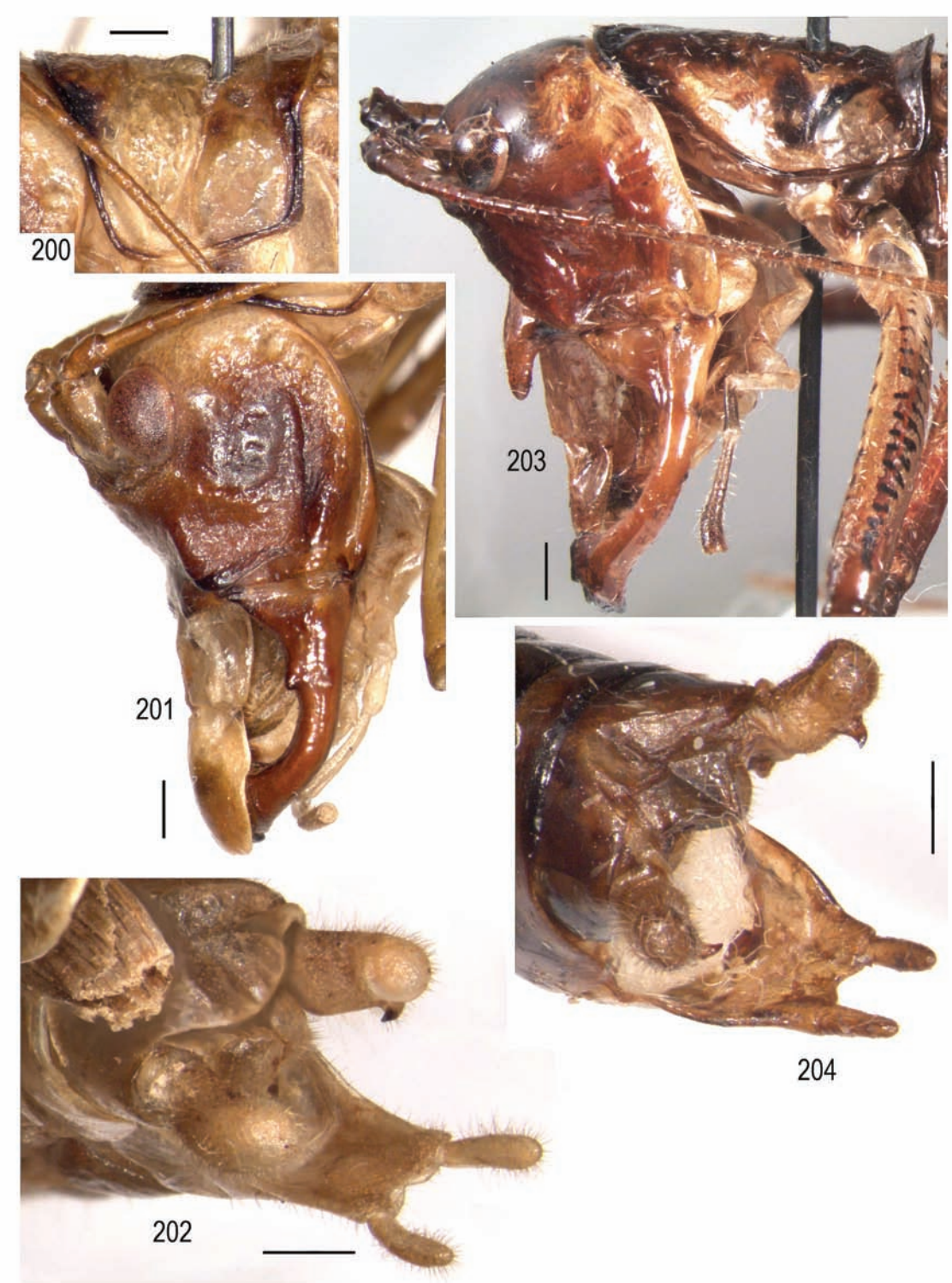
Note. This genus consists of two subgenera: *Gnathoclita* s. str. and *Disceratus* Scudder, 1869, stat. nov. These subgenera were included as separate genera in the tribes Eucocconotini (*Gnathoclita*) and Glaphyraspidini (*Disceratus*) by Beier (1960). However, they are very similar in the structure of male head (Figs 192, 195, 201, 203) and of almost all other bodyparts including male copulatory devices (Figs 193, 194, 196, 197, 202, 204). Main differences of *Disceratus* from *Gnathoclita* s. str. are the presence of a pair of additional processes on upper part of clypeus (or on articulated areas of lower part of epicranium), and lower lateral pronotal lobes of male with the anteroventral edges more oblique (for comparison see Figs 192, 193, 200, 201, 203). Size of the coxal tubercles of legs and peculiarities of the pronotal surfaces (granulate or glabrous) may be varied inside of the same genus. The latter character is also varied inside of *Disceratus* sensu Beier, 1960: in *G. immanis* (Hebard, 1924), comb. nov. and *G. nubiger* (Scudder, 1869), comb. nov., pronotum is glabrous; but in *G. festae* (Giglio-Tos, 1898), comb. nov. and *G. karschi* (Brunner-Wattenwyl, 1895), comb. nov., it is with granulate areas. Lateral position of tympanal slits in all the *Disceratus* species is also in need of examination, because in the photographs of holotypes of *G. festae* and *G. karschi*, these slits are indistinctly visible but not looking as lateral ones (Eades et al. 2013).

Gnathoclita (*Disceratus*) *anostostoma* Gorochov, 2012 (type species of *Tettohenicus*) is distinguished from the other representatives of *Disceratus* by the following characters: from *G. festae* and *G. karschi*, by glabrous (not granulate) pronotum and different colouration of legs; from *G. immanis*, by the additional processes on upper part of male clypeus (or on articulated areas of lower part of male epicranium) thicker and directed mainly downwards (*vs.* mainly forwards) as well as femora more spotted but having not darkened apical part; and from *G. nubiger*, by the anterior half of pronotum lower and with less angular anteroventral edge of pronotal lateral lobes as well as by distinctly spotted femora.

Gnathoclita (*Gnathoclita*) *peruviana* Carl, 1921

(Figs 192–194, 200–202)

Material studied. PERU: 1 male and 1 female, Pasco Department, Oxapampa Prov., environs of Oxapampa Town, 2200 m, secondary forest, on leaves of bushes at night, 3–4 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva coll.



Figs 200–208. *Gnathoclita* Hagenbach, male: 200–202 – *G. peruviana* Carl; 203, 204 – *G. anostostoma* Gor. Pronotum from side (200); head from side (201); head and pronotum from side (203); abdominal apex from side and slightly above / behind (202, 204). Scale bars: 1 mm. [203 – after Gorochov 2012b].

Note. This species is described from Peru (after Eades et al. 2013 from locality "Chinchamayo"), and the above-mentioned specimens are completely in accordance to its original decription (Carl 1921). *G. peruviana* is recorded here for another locality in Peru.

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