Taxonomy of Podoscirtinae (Orthoptera: Gryllidae). Part 8: American taxa of the tribe Podoscirtini

Таксономия подсемейства Podoscirtinae (Orthoptera: Gryllidae). Часть 8: американские таксоны трибы Podoscirtini

A.V. Gorochov

А.В. Горохов

A.V. Gorochov, Zoological Institute, Russian Academy of Sciences, 1 Universitetskaya Emb., St. Petersburg, 199034, Russia. E-mail: orthopt@zin.ru

Tribal position of some American representatives of Podoscirtinae and differences between this subfamily and Eneopterinae are discussed. Two former tribes are reduced to the subtribes Aphonomorphina and Neometrypina (both in Podoscirtini). Two new genera, four new subgenera, 30 new species and two new subspecies are described. The former genus *Euaphonus* Hebard, 1928 is reduced to a subgenus of the genus *Aphonomorphus* Rehn, 1903. New replacement name *Eneopteroides chopardi* **nom. nov.** is proposed for *Eneopteroides flavifrons* Chopard, 1956 which is a junior secondary homonym of *Eneopteroides flavifrons* (Saussure, 1897). Systematic position and distribution of some other American taxa of Podoscirtini are clarified.

В работе обсуждаются таксономичское положение некоторых американских представителей Podoscirtinae и различия между этим подсемейством и Eneopterinae. Ранг двух триб понижен до подтрибы: Aphonomorphina и Neometrypina (обе в Podoscirtini). Описаны два новых рода, четыре новых подрода, 30 новых видов и два новых подвида. Бывший род *Euaphonus* Hebard, 1928 включен в род *Aphonomorphus* Rehn, 1903 в качестве подрода. Предложено новое замещающее название *Eneopteroides chopardi* **nom. nov.** для *Eneopteroides flavifrons* Chopard, 1956, который стал младшим вторичным омонимом названия *Eneopteroides flavifrons* (Saussure, 1897). Уточнено систематическое положение и распространение некоторых других американских таксонов трибы Podoscirtini.

Key words: America, Orthoptera, Gryllidae, Podoscirtinae, Podoscirtini, taxonomy, new taxa

Ключевые слова: Америка, Orthoptera, Gryllidae, Podoscirtinae, Podoscirtini, таксономия, новые таксоны

INTRODUCTION

This paper is the eighth communication in the series of publications on taxonomy of Podoscirtinae. The first to fifth parts (Gorochov, 2002, 2003, 2004, 2005, 2006) contain data on the tribe Podoscirtini in the Old World (Asia, New Guinea, Oceania, Australia, Madagascar, Africa, some other islands). The sixth and seventh parts (Gorochov, 2007, 2008) concern the tribe Aphonoidini in the Indo-Malayan and Australo-Oceanian regions. In two of these communications (the forth and the seventh), some preliminary hypotheses about historical geography of these tribes in the Old World were proposed.

The material examined (including the type series of all new species) is deposited at the Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN). Majority of the specimens studied was collected by me together with my field colleagues in tropical forests. Many of them flew at light. Some specimens sat on leaves of trees and bushes at night.

TAXONOMIC PART

The Podoscirtinae is a group of obligatory inhabitants of plant, living mainly on leaves of trees and bushes in tropical forests. Oviposition in this subfamily has place on plants also; its representatives dip their eggs into plant tissues (into wood of young branches or bark) with help of drilling ovipositor. All the taxa of Podoscirtinae (excepting a few specialised representatives) have the apical part of ovipositor with the short teeth and hooks which are used for cutting of plant tissues. For well attachment to the smooth surface of leaves, these insects have the significantly expanded ventral part of second tarsal segment and distinctly shortened basitarsi of all legs. Moreover such structure of tarsi is accompanied by the development of long and strong hind basitarsal spurs. These characters were evidently presented in a general ancestor of this subfamily.

In this connection, the inclusion of some or all groups of Podoscirtinae in Eneopterinae (Desutter, 1987; Otte & Perez-Gelabert, 2009; Eades et al., 2010) is incomprehensible. Most related groups of Podoscirtinae are possibly the subfamilies Pentacentrinae, Oecanthinae and Euscyrtinae (Gorochov, 1986, 1995, 2001); the Pentacentrinae may be an ancestral group for the others, and the Oecanthinae and Euscyrtinae may be descendants of Pentacentrinae as well as of primitive representatives of Podoscirtinae. For Eneopterinae, the quite different relatives are supposed in Gorochov's publications (Hemigryllinae and Landrevinae); adaptation of Eneopterinae to life on plants is only partial (with preservation of primitive oviposition in soil, of not drilling ovipositor, of rather small second tarsal segment and spurs of hind basitarsus, and of almost not shortened or weakly shortened basitarsi); mode of life in their larves or in all their stages is often connected with forest floor more than with plants. It is supposed that the Eneopterinae began to develop their adaptations to life in plant later than Podoscirtinae and independently from this group (more or less parallel adaptive evolution is characteristic also for Trigonidiinae from the same family and for Arachnocephalini from the family Mogoplistidae).

The tribal division of Podoscirtinae is not stable also. Gorochov (1986) divided this subfamily into Podoscirtini, Aphonoidini, Paroecanthini, Hapithini and Phaloriini (later he considered the latter tribe a separate subfamily; Gorochov, 1995). Desutter (1987, 1988) suggested the family rank for Podoscirtinae and the subfamily rank for Podoscirtini and Hapithini, described the subfamily Tafaliscinae (inside her Eneopteridae) and the tribes Aphonomorphini (inside her Podoscirtinae), Neomorphini (inside her Hapithinae), Diatrypini and Neometrypini (inside her Tafaliscinae); she also included Paroecanthini in her Tafaliscinae. Gorochov (1995) did not agree with Desutter; he included her Aphonomorphini and Neometrypini in Podoscirtini as well as her Neomorphini in Hapithini, but preserved Diatrypini as a fifth tribe of Podoscirtinae and supposed that Desutter's Tafaliscinae and Chopard's Stenogryllinae may be additional tribes of this subfamily. At present my opinion is intermediate between that from my paper of 1986 and that from my book of 1995. The name Stenogryllinae should be rejected (International Comission on Zoological Nomenclature, 1999: paragraph 65.2.1), as Chopard (1912) based the description of this taxon on an erroneous determination: his description is based on the genus *Tafalisca* Walker, 1869 only and contradicts to the characters of *Stenogryllus* Saussure, 1878. Now these genera are included in different higher taxa (*Tafalisca* in Paroecanthini and *Stenogryllus* in Hapithini). Discussion on some other questions of tribal and subtribal position of American Podoscirtinae are placed below.

Tribe **PODOSCIRTINI** Saussure, 1878

This tribe is most diverse among Podoscirtinae in external morphology and

structure of genitalia. However in America, the Podoscirtini is presented by only a few genera which have the male genitalia similar to those in one of generic groups of Podoscirtini from the Old World. Three of these American genera (*Aphonomorphus* Rehn, 1903, *Eneopteroides* Chopard, 1956 and *Spiraphonus* **gen. nov.**) show certain similarity in the structure of the tympanal organs, tegmina and male genitalia to the Indo-Malayan genus *Idiotrella* Gorochov, 2002. Inner tympanum of four these genera is distinctly immersed. Their wings are long (hind wings are longer than tegmina) and with the characteristic, more or less irregular (cellular) cross-vein venation between the oblique longitudinal branches of dorsal field in female and in male losing tegminal stridulatory apparatus. Male genitalia of these genera are characterised by the following characters: epiphallus has a pair of dorsoapical spines, tubercles or lobes directed upwards, upwards–backwards or upwards–forwards; ectoparameres are articulated with the lateral parts of epiphallus and lateral projections of endoparameres; guiding rod is large and strongly modified (very long and with the twisted and more or less inflated distal part, or divided into 2–3 lobes or processes which usually articulated with each other almost in one dot or connected with each other only by the weakly sclerotised ribbons); endoparameres are with the very long apodemes and articulated with the ectoparameres, parts of guiding rod and of mold of spermatophore attachment plate; the latter mold is presented by a pair of ribbon-like weak sclerites fused with each other at the anterior part and provided with the more or less elongate unpaired apodeme (Fig. I: 1–6).

So, these four related genera (three American and one Indo-Malayan) and possibly the American genus *Paraphonus* Hebard, 1928 (distinguished by the lost of tympana, but having the male genitalia very similar to those of *Eneopteroides*; Fig. XVI: 6–10) may be included in the same subtribe which must be named Aphonomorphina Desutter, 1988, **new status** (from Aphonomorphini originally described only for American taxa; Desutter, 1988). The former genus *Euaphonus* is here included in *Aphonomorphus* as its subgenus. For the poorly known American genus *Neometrypus* Desutter, 1988 having the male genitalia somewhat similar to those of different genera from the Old World (*Furcitrella* Gorochov, 2002, *Noctitrella* Gorochov, 1990, *Varitrella* Gorochov, 2003, *Fryerius* Uvarov, 1940, and some others), the monotypic subtribe Neometrypina Desutter 1988, **new status** (probably belonging to the tribe Podoscirtini) may be proposed for Neometrypini of Desutter (1988). An additional enigmatic genus (*Aenigmaphonus* **gen. nov.**) of Podoscirtini is described below out of any subtribe.

Genus ***Eneopteroides*** Chopard, 1956

Type species: *Eneopteroides chopardi* **nom. nov.** [= *E. flavifrons* Chopard, 1956, junior secondary homonym of *Eneopteroides flavifrons* (Saussure, 1897) **(new combination)** originally described as *Aphonus flavifrons* Saussure, 1897 and then assigned to *Aphonomorphus*)] (Peru).

Note. This genus was correctly redescribed by Desutter-Grandcolas (2003). It has the inner tympanum only and tegmina of both sexes are very similar (lacking stridulatory apparatus). *Eneopteroides* is distinguished from the most close-related genus *Aphonomorphus* by the shape of the head (Fig. II: 1, 3) slightly similar to that of the genus *Eneoptera* Burm. (eyes are somewhat more elevated; rostrum is distinctly shorter and widely rounded in profile), absence of metanotal gland in male, longer epiphallus having only a pair of small dorsoapical lobes weakly or noticeably curved upwards, short ectoparameres, large and lamellar second ectoparameres (these ectoparameres are remnants of guiding rod which is entirely divided into two semisclerotised lobes more or less articulated with each other basally), and rather small endoparameres connected

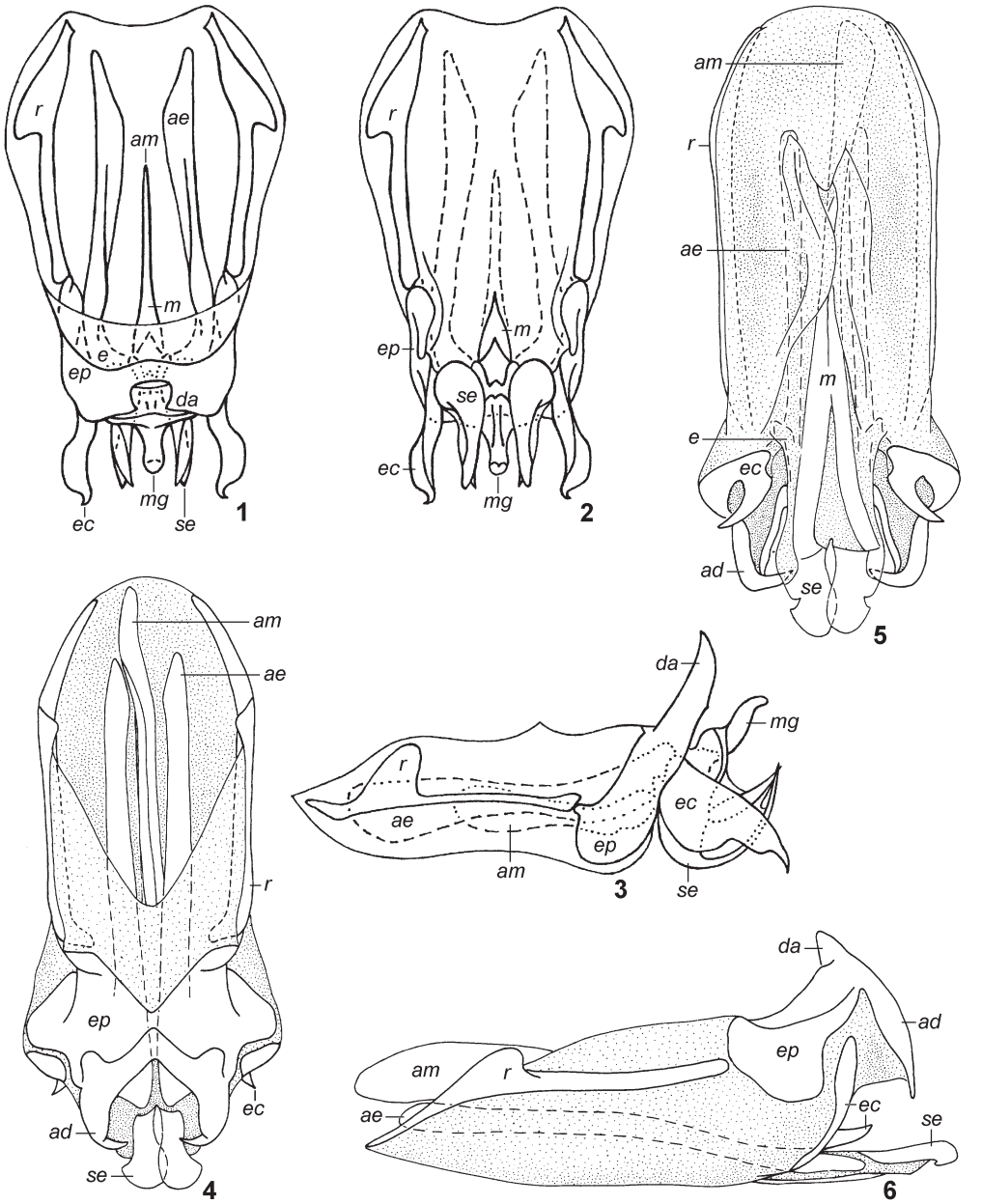

Fig. I (1–6). *Idiotrella* and *Aphonomorphus*, male. **1–3**, *I. javae* Gorochov, 2002; **4–6**, *A. mutus*. Genitalia from above (1, 4), from below (2, 5) and from side (3, 6). [1–3, after Gorochov (2002); 4–6, after Desutter (1987).] Abbreviations: *ad*, additional sclerotised process of epiphallic apical part; *ae*, apodeme of endoparamere; *am*, apodeme of mold of spermatophore attachment plate; *da*, dorsoapical spine or lobe of epiphallus; *e*, endoparamere; *ec*, first ectoparamere (= ectoparamere); *ep*, epiphallus; *m*, mold of spermatophore attachment plate; *mg*, median lobe or process of guiding rod; *r*, ramus; *se*, second ectoparamere (= more or less articulated lateral lobe or process of guiding rod).

with each other by the weak (but distinct) transverse sclerite (the latter character is important for distinguishing of these two genera; Fig. III: 1–11). Female is known only in a single species; its ovipositor (Otte & Perez-Gelabert, 2009: fig. 400D) seems indistinguishable from that of *Aphonomorphus* (Fig. II: 8, 9).

This genus, except for the type species, contains 6 or 7 species listed in their original binomen: *Aphonus flavifrons* Saussure, 1897 (Mexico); *Aphonomorphus bicolor* Hebard, 1928 (Panama); *E. cordobensis* Desutter-Grandcolas, 2003 (Columbia); *E. loretensis* Desutter-Grandcolas, 2003 (Peru); *Aphonomorphus tobago* Otte & Perez-Gelabert, 2009 (Tobago I.); *E. cuyabeno* **sp. nov.**; possibly *A. celeticos* Otte, 2006 (Costa Rica).

Eneopteroides flavifrons (Saussure, 1897), new combination

(Figs II: 1–2, III: 1–7)

Aphonus flavifrons Saussure, 1897
Aphonomorphus flavifrons: Eades & al, 2010.

Material examined. One male; **Mexico**, Veracruz State, 15–20 km NE of Catemaco Town, Los Tuxtlas (biostation of Mexico University) in 2 km from coast of Mexican Gulf, primary forest on hills, 6–17 Nov. 2006; coll. A. Gorochov & A. Ovtshinnikov; ZIN. One male; **Mexico**, Chiapas State, environs of Palenque Town near Maya archeological centre, ~ 200 m, primary forest, 18–20 Nov. 2006; same collectors; ZIN.

Redescription. Male. Colouration (Fig. II: 1, 2) brown with yellowish-rose both wide transverse band on face (between eyes) and base of antennae, light brown rest of antennae (having very small and sparse whitish spots), contrastingly spotted longitudinal vein along lateral edge of distal 2/3 of dorsal tegminal field (spots of this vein moderately long, whitish and dark brown), and more or less light brown all coxae, middle and hind femora, spines of hind tibiae (and in male from Chiapas, large areas on middle and hind tibiae), spurs of hind basitarsi, distal segment of all tarsi, ventral half of abdomen, and cerci (but middle femora with weakly distinct small darkish dots, outer surface of hind femora with dark longitudinal stripe in median part and grayish area under this stripe, ventral and distal parts of inner surface of these femora more or less spotted, areas on sternites and on median part of genital plate grayish, and cerci with sparse dark dots). Ocelli moderately large (Fig. II: 1); rostrum between antennal cavities slightly wider than scape. Pronotum transverse, with short and almost angular hind median lobe. Fore tibiae with only inner tympanum which oval, medium-sized (for this subtribe) and partly opened; spines of hind tibiae narrow, not flattened, and situated in distal half of tibiae (Fig. II: 2). Dorsal field of tegmina with longitudinal branches almost indistinguishable from cellular cross-vein venationov. Anal plate simple in shape, with more or less rounded apex; genital plate elongate, gradually narrowing to rounded apex having small median notch; genitalia as in Fig. III: 1–7 (male from Chiapas with proximal part of epiphallus somewhat narrower and ventral lobes of epiphallic distal half slightly more projected than in male from Veracruz).

Female unknown.

Length in mm. Body 15–17.5; body with wings 22–25.5; pronotum 2.7–3.3; tegmina 15.5–18.5; hind femora 10.7–13.5.

Eneopteroides cuyabeno sp. nov.

(Figs II: 3–5, III: 8–11)

Holotype. Male; **Ecuador**, eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying primary forest, 2–9 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Paratype. Male; same data as for holotype; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of *E. flavifrons* from Mexico, but distinguished by following characters: hind part of head dorsum dark brown; light transverse band on face whitish and reaching clypeus; median areas of clypeus light brown (Fig. II: 3); pronotum with several

Fig. II (1–10). *Eneopteroides* and *Aphonomorphus*. **1–2**, *E. flavifrons*; **3–5**, *E. cuyabeno* **sp. nov.**; **6–9**, *A. ecuador* **sp. nov.**; **10**, *A. peru* **sp. nov.** Head in front (1, 3, 6); hind leg (2), hind femur (4) and hind tibia with tarsus (5) from side; male metanotal gland from above (7, 10); distal part of ovipositor from side (8) and from below (9).

small dark brown spots on disc; tegmina almost light brown with longer spotted stripe along lateral edge of dorsal field (this stripe presented on most part of proximal third of tegmina also), with irregular very light spots on lateral field, and with a few very light spots on median part of dorsal field (majority of latter spots with grayish brown borders); middle tibiae with colouration as in male of *E. flavifrons* from Chiapas; hind femora with very light brown dorsal half having a few small dark spots;

hind tibiae and basitarsi as well as their spines and spurs brown with light apical part of these spines and spurs; all tarsi with darkish distal part of apical segment (Fig. II: 4, 5); lateral parts of abdominal tergites weakly spotted; genital plate with light brown base; cerci with somewhat larger darkened spots on distal half; rostrum between antennal cavities hardly narrower than scape; ocelli slightly larger (Fig. II: 3); spines of hind tibiae widened in middle part and somewhat flattened, situated as on distal half of tibia as on most part of proximal half of tibia (Fig. II: 5); genitalia with wider apical part of epiphallus, longer distal lobe of ectoparameres (first ectoparameres), and distinctly larger distal (widened) part of second ectoparameres (Fig. III: 8–11).

Variations. Paratype with light brown area on labrum, almost completely brown middle tibiae, and brown lateral part of cercal base.

Female unknown.

Length in mm. Body 17–18; body with wings 26–28; pronotum 2.9–3.1; tegmina 19–20.5; hind femora 12–12.5.

Comparisons. The new species differs from all the other congeners in the very chartacteristic (widened and flattened) spines of hind tibiae. Additionally it differs from *E. flavifrons* in the characters listed in its description; from *E. tobago* **(new combination)**, in the absence of ventral subapical lobe of hind femora; from *E.? celeticos* **(new combination)**, in the darker head dorsum and smaller apical epiphallic notch; and from *E. chopardi*, *E. bicolor*, *E. cordobensis* and *E. loretensis*, in the shorter first ectoparameres and/or wider distal (widened) part of second ectoparameres as well as presence of light area on face and/or of more or less dark longitudinal stripe on hind femora.

Genus ***Aphonomorphus*** Rehn, 1903

Type species: *Aphonus mutus* Saussure, 1874 ("Le Guyane").

Note. Judging to the electronic catalogue (Eades et al., 2010), this genus includes 38 species. However three of them (*A. flavifrons*, *A. tobago*, *A. celeticos*) are here transferred to the genus *Eneopteroides*, two of them (*A. dissimilis* Chopard, 1956 and *A. deceptor* Chopard, 1956) are included in a new genus described below, and some of other species is in need of revision for clarification of their systematic positionov. Moreover a type species of the former genus *Euaphonus* must be put in the genus *Aphonomorphus* (the Sulawesian species, which is one of two species included in *Euaphonus* in the abovementioned catalogue, possibly belongs to Aphonoidini; Gorochov, 2007), and 27 new species are described below.

All the true representatives of *Aphonomorphus* are similar to *Eneopteroides* in the structure of body (including male genitalia) and differ from the latter genus in the somewhat narrower areas of epicranium under eyes, less short and roundly angular (in profile) rostrum, presence of metanotal gland in male, usually shorter epiphallus with the diverse dorsoapical structures (spines, tubercles, lobes), usually spinose or more hooked second ectoparameres, and left and right endoparameres lacking any sclerotised connection with each other (the latter character is most important) (Figs I: 4–6, IV–XIV). Apical part of ovipositor, evidently indistinguishable from that of *Eneopteroides*, is also more or less similar to that of *Idiotrella* (in the both genera, this part is weakly widened and with the almost conical distal half, more or less acute apex, and not large drilling teeth on the ventral and lateral sides only), but in *Aphonomorphus* (and in *Eneopteroides*), the drilling teeth are somewhat smaller (Fig. II: 8, 9).

The genus *Aphonomorphus* is here divided into 6 subgenera which are distinguished from each other mainly by the characters of male genitalia given in the following subgeneric key:

1. Second ectoparameres completely divided into two more or less sclerotised lobes having their bases articulated with each other almost in one dot (Figs I: 4–6; IV–XII; XIII: 1–9; XIV) 2

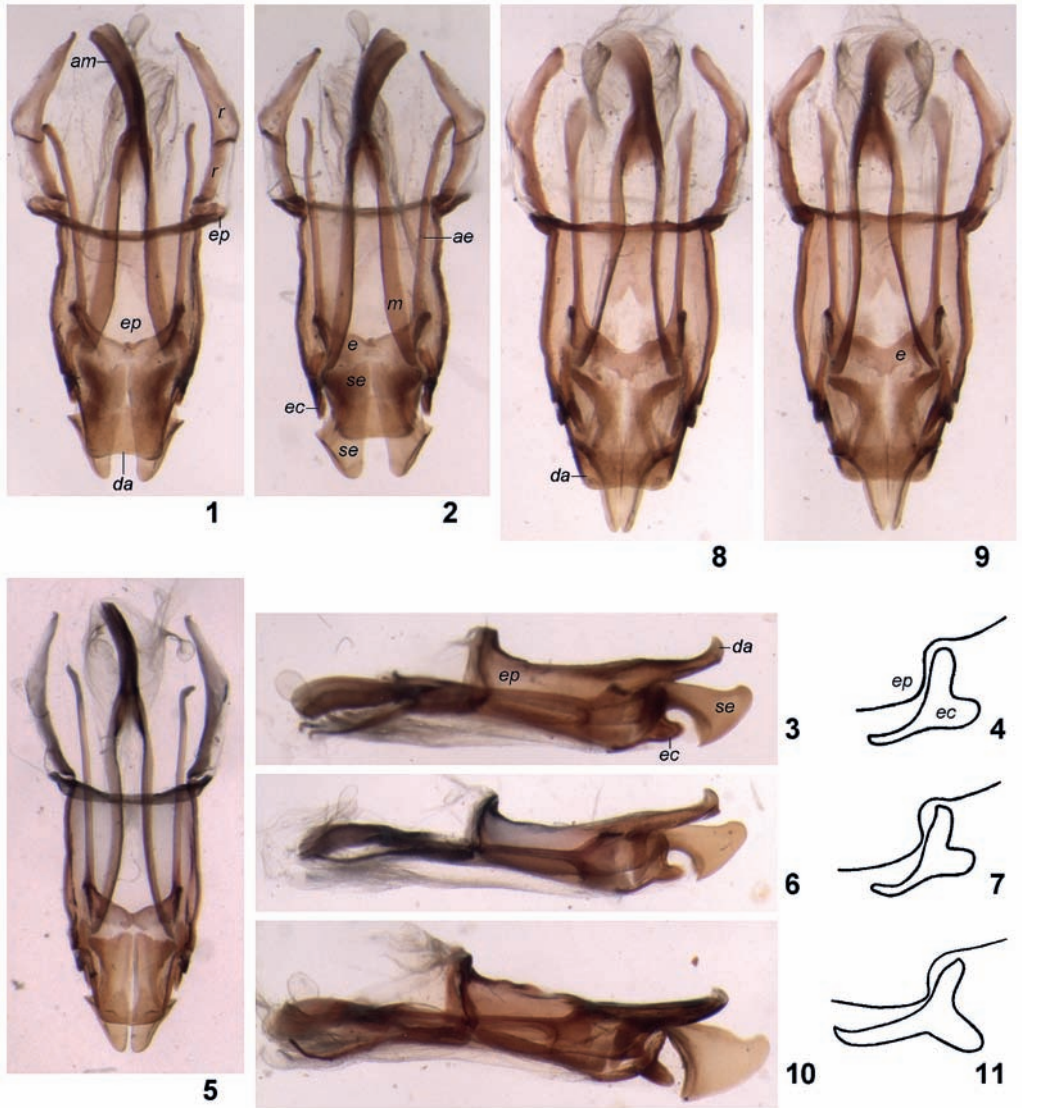

Fig. III (1–11). *Eneopteroides*, male. **1–4**, *E. flavifrons*, Veracruz; **5–7**, same species, Chiapas; **8–11**, *E. cuyabeno* **sp. nov.** Genitalia from above (1, 5, 8), from below (2, 9) and from side (3, 6, 10); first ectoparamere and ventral lobe of epiphallic distal half from side (4, 7, 11). Abbreviations as in Fig. I (1–6).

– Proximal halves of second ectoparameres partly fused with each other (Fig. XIII: 10–13) . . . subgenus ***Minaphonus*** **subgen. nov.** [*Aphonomorphus gusarovi* **sp. nov.** (type species), possibly *A. griseus* Chopard, 1912 (French Guyana)]

2. Apical part of epiphallus with a pair of additional sclerotised processes (*ad*) directed backwards or partly downwards [excepting dorsoapical spines, tubercles or lobes (*da*) directed upwards or partly upwards] (Figs I: 4–6, IV–IX) 3

– Apical part of epiphallus without additional sclerotised processes [excepting dorsoapical spines, tubercles or lobes (*da*) directed upwards or partly upwards] (Figs X–XII, XIII: 1–9, XIV) 4

3. Fore tibiae with tympanum partly opened. Additional sclerotised processes (*ad*) of epiphallic apical part well distinct (large or moderately small) and directed backwards or backwards-downwards (Figs I: 4–6, IV–VIII) . . . . . subgenus ***Aphonomorphus*** [*Aphonus mutus* Saussure, 1874 (type species), *Aphonomorphus stipatus* Chopard, 1956 (Bolivia), *A. schunkei* Chopard, 1956 (Peru), *A. adjunctus* Chopard, 1956 (Peru), *A. socius* Chopard, 1956 (Peru), *A. ecuador* **sp. nov.**, *A. ucayali* **sp. nov.**, *A. sympatricus* **sp. nov.**, *A. humilis* **sp. nov.**, *A. peru* **sp. nov.**, *A. solitarius* **sp. nov.**, *A. montanus* **sp. nov.**, *A. solitus* **sp. nov.**, *A. proximus* **sp. nov.**, *A. robustus* **sp. nov.**, *A. venado* **sp. nov.**, *A. morona* **sp. nov.**, probably *A. telskii* (Saussure, 1874) (Peru and Brazil)]
– Fore tibiae with slit-like tympanal organs. Additional sclerotised processes (*ad*) of epiphallic apical part almost indistinct (very small) and directed backwards and partly forwards (almost cuddled up to inner surface of this epiphallic part) (Fig. IX) . . . . . subgenus ***Euaphonus***, **new status** [*Aphonus peruvianus* Saussure, 1874 (type species), *Aphonomorphus fuscus* **sp. nov.**, *A. dilutus* **sp. nov.**, *A. atalaya* **sp. nov.**]
4. Epiphallus with proximal part much shorter than dorsoapical spines or lobes (latter ones sometimes more or less fused with each other); first ectoparameres deeply bifurcate; second ectoparameres not hooked (Figs X–XII) . . . . . subgenus ***Furcaphonus*** **subgen. nov.** [*Aphonomorphus satipo* **sp. nov.** (type species), *A. allardi* Chopard, 1956 (Peru), *A. vulgatus* **sp. nov.**, *A. simulator* **sp. nov.**, *A. amazon* **sp. nov.**, *A. elongatus* **sp. nov.**, *A. woronovi* **sp. nov.**, *A. fasciatus* **sp. nov.**]
– Epiphallus with proximal part usually not shorter than dorsoapical spines or lobes; first ectoparameres not bifurcate or moderately bifurcate (in latter case, second ectoparameres distinctly hooked) (Figs XIII: 1–9; XIV) 5
5. Epiphallus with proximal part clearly longer than dorsoapical epiphallic spines or lobes, and with rather large median (not bifurcate or slightly bifurcate) apical lobe situated under these epiphallic spines or lobes (Fig. XIII: 1–8) . . . . . subgenus ***Lobaphonus*** **subgen. nov.** [*Aphonomorphus distinctus* **sp. nov.** (type species), *A. mirus* **sp. nov.**]
– Epiphallus with proximal part not longer than dorsoapical spines or lobes, and without any median apical lobe situated under dorsoapical epiphallic spines or lobes (Fig. XIV) . . . . . subgenus ***Neoaphonus*** **subgen. nov.** [*Aphonomorphus deviatus* **sp. nov.** (type species), possibly *A. obscurus* Chopard, 1956 (Bolivia), *A. ferox* Otte, 2006, *A. socors* Otte, 2006, *A. beltistos* Otte, 2006, *A. halans* Otte, 2006 (all from Costa Rica), and *A. parobscurus* **sp. nov.**]

Aphonomorphus (*Aphonomorphus*) *ecuador* sp. nov.
(Figs II: 6–9, IV: 1–6)

Holotype. Male; **Ecuador**, eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying primary forest, 2–9 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Paratypes. Male, female; same data as for holotype; ZIN. Male; **Ecuador**, eastern plain, ~70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying primary forest, 10–17 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Description. Male (holotype). Colouration light brown with following marks: epicranium with large brown spot on dorsum between middle parts of eyes (this spot including brown area between ocelli); antennal flagellum with sparse, small and rather weak darkish spots; fore and middle femora and tibiae with numerous weakly distinct darkish dots; outer and dorsal parts of hind femora almost unicoloured, but with a row of small brown spots along outer ventral keel; hind tibiae with only darkish middle part of spines; tegmina very light brown (almost yellowish), with a long row of small brown spots along lateral edge of dorsal field, very small darkish stripes along cross-veins in lateral field and along some veinlets in dorsal field (distal part of both these fields with such stripes situated along both edges of each veinlet). Ocelli moderately large; lateral ocelli distinctly larger than median ocellus (Fig. II: 6); rostrum between antennal cavities almost equal to scape in width. Pronotal disc with very

short and rounded hind median projection; metanotal gland as in Fig. II: 7. Anal plate simple, narrowing to more or less narrow and rounded apex; genital plate similar to that of *Eneopteroides* (see redescription of *E. flavifrons* above); epiphallus of genitalia with rather narrow and long dorsoapical spines (*da*) as well as with spine-like additional sclerotised apical processes (*ad*) almost equal to latter spines in length and connected with lower parts of epiphallus by wide membranes; first ectoparameres hook-like; second ectoparameres rather wide and lamellar (both pairs of ectoparameres situated in copulatory position: first ectoparameres directed aside for anchor-like fixation in female genital chamber; plane of second ectoparameres situated vertically) (Fig. IV: 5, 6).

Variations. Other males with less sclerotised genitalia (these specimens probably collected shortly after molting and having genitalia in rest position: first ectoparameres directed partly backwards and plane of second ectoparameres situated horizontally, not as in holotype; Fig. IV: 1–4).

Female. Colouration and structure of body as in male, but genital plate much shorter and roundly narrowing to rather narrow and truncate apex; ovipositor with distal part as in Fig. II: 8, 9.

Length in mm. Body: male 18–23, female 21; body with wings: male 31–33, female 36; pronotum: male 3–3.4, female 3.5; tegmina: male 23–25, female 26; hind femora: male 13–14, female 15; ovipositor 18.5.

Comparisons. The new species is most similar to *A. mutus* (Fig. I: 4–6), but distinguished by the distinctly longer dorsoapical epiphallic spines and larger second ectoparameres in male genitalia.

Aphonomorphus (*Aphonomorphus*) *ucayali* sp. nov.
(Fig. IV: 7–10)

Holotype. Male; **Peru**, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, 26–31 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Male (holotype). Colouration and structure of body very similar to those of *A. ecuador*, but general colouration hardly darker, rostrum of head brown (this brown area fused with brown area between ocelli), small darkish stripes on dorsal tegminal field partly fused with each other and forming 4–5 irregular darkish bands on proximal 2/3 of this field, brown spots on outer ventral keel of hind femora less distinct (smaller and more sparse), epiphallus with shorter dorsoapical spines (*da*) and with longer spine-like additional sclerotised apical processes (*ad*) which distinctly longer than above-mentioned spines, first ectoparameres longer and less arched, and second (lamellar) ectoparameres distinctly narrower (Fig. IV: 7–10).

Female unknown.

Length in mm. Body 22; body with wings 32; pronotum 3.1; tegmina 23; hind femora 13.

Comparisons. The new species is most similar to *A. ecuador* and *A. mutus*, but it differs from the first of them in the above-listed characters, and from *A. mutus*, in the distinctly longer both a pair of dorsoapical epiphallic spines and a pair of first ectoparameres.

Aphonomorphus (*Aphonomorphus*) *sympatricus* sp. nov.
(Fig. V: 1–6)

Holotype. Male; **Ecuador**, eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying primary forest, 2–9 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Paratype. Male; same data as for holotype; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of *A. ecuador*, but head and legs unicoloured (very light brown) and with weak and small darkish spots along outer ventral keel of hind femora only, tegmina with longer brown

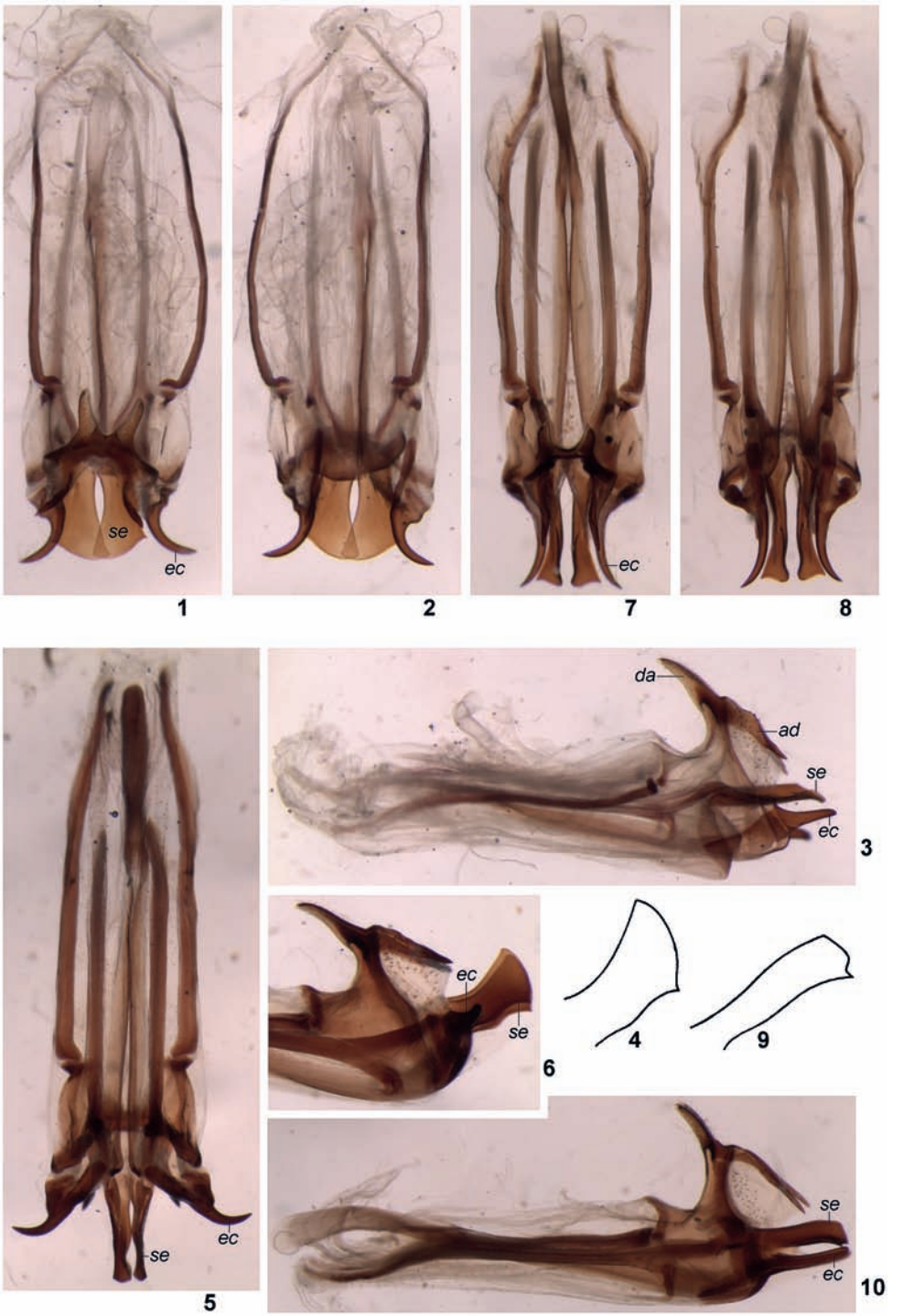

Fig. IV (1–10). *Aphonomorphus* Rehn, male. **1–4**, *A. ecuador* **sp. nov.**, paratype; **5–6**, same species, holotype (ectoparameres in copulatory position); **7–10**, *A. ucayali* **sp. nov.** Genitalia from above (1, 7), from below (2, 5, 8) and from side (3, 10); distal half of genitalia from side (6); second ectoparamere from position perpendicular to its plane (4, 9). Abbreviations as in Fig. I (1–6).

spots along lateral edge of dorsal field and less distinct other darkish marks (however apical part of latter field hardly darkened and with somewhat lighter cross-veins), epiphallus with angular dorsoapical lobes (*da*) much shorter than dorsoapical spines of *A. ecuador*, additional sclerotised apical epiphallic processes (*ad*) much shorter and with proximal half contacting (fused?) with epiphallus, and second ectoparameres with long membranous ventral lobe and distinctly hooked apical part as well as with distinct tooth on lateral side (Fig. V: 1–3).

Variations. Paratype with sparse darkish dots on pronotum and less sclerotised genitalia having proximal half of additional sclerotised apical epiphallic processes (*ad*) almost separated from epiphallus (this specimen probably collected shortly after molting; Fig. V: 4–6).

Female unknown.

Length in mm. Body 22–24; body with wings 32–34; pronotum 3.5–3.7; tegmina 23.5–25; hind femora 15.5–16.5.

Comparisons. The new species is most similar to *A. mutus*, but distinguished by the shorter additional sclerotised apical epiphallic processes (*ad*) and presence of distinct lateral tooth at the second ectoparameres. From the other known species of this subgenus, the new species differs in the characteristic shape of second ectoparameres which have the long ventral membranous lobe.

Aphonomorphus (*Aphonomorphus*) *humilis* sp. nov.

(Fig. V: 7–12)

Holotype. Male; **Ecuador**, eastern slopes of Andes Mountains, ~95 km E of Quito City, environs of San Rafael Waterwall on Rio Coca, ~1300 m, primary forest, 23–26 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Paratypes. Nine males, four females; same data as for holotype; ZIN. Two males; **Ecuador**, eastern slopes of Andes Mountains, ~75 km SEE of Quito City, environs of El Chaco Vill. on Rio Quijos, ~1500 m, secondary forest, 18–22 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of *A. ecuador*, but body slightly smaller, dorsum of head light brown (without darkish area), darkish spots along outer ventral keel of hind femora almost indistinct (these spots very small and sparse), colouration of tegmina almost as in *A. ucayali*, epiphallus with small dorsoapical lobes (*da*) instead spines, these lobes together with additional sclerotised apical epiphallic processes (*ad*) almost articulated with rest of epiphallus, latter processes somewhat shorter, first ectoparameres with widened and slightly bifurcate distal half, second ectoparameres distinguished from those of *A. sympatricus* only by wider asclerotised part and absence of lateral tooth (Fig. V: 7–9, 12).

Variations. Colouration from slightly lighter to slightly darker (head dorsum sometimes with short darkish stripes along hind edge of median ocellus and along medial edges of lateral ocelli) and genitalia in some males with copulatory position of ectoparameres (first ectoparameres directed upwards, not partly backwards as in rest position and not aside as in copulatory position of previous species described here, and second ectoparameres directed partly aside; Fig. V: 10, 11).

Female. Size of body and colouration of head as in male; other characters almost as in female of *A. ecuadori*, but genital plate shorter and with widely rounded apex having small median notch.

Length in mm. Body: male 16–19, female 18–22; body with wings: male 26–29, female 28–30; pronotum: male 2.7–3, female 2.7–2.9; tegmina: male 18–19.5, female 18–19.5; hind femora: male 11.5–12.5, female 12–12.8; ovipositor 13–14.

Comparisons. The new species is most similar to *A. sympatricus* in the shape of second ectoparameres, but well distinguished by the almost not hooked distal (widened) part of first ectoparameres and distinctly longer rest part of these ectoparameres (for comparison see Fig. V: 6, 12). From the other congeners, the new species differs in the

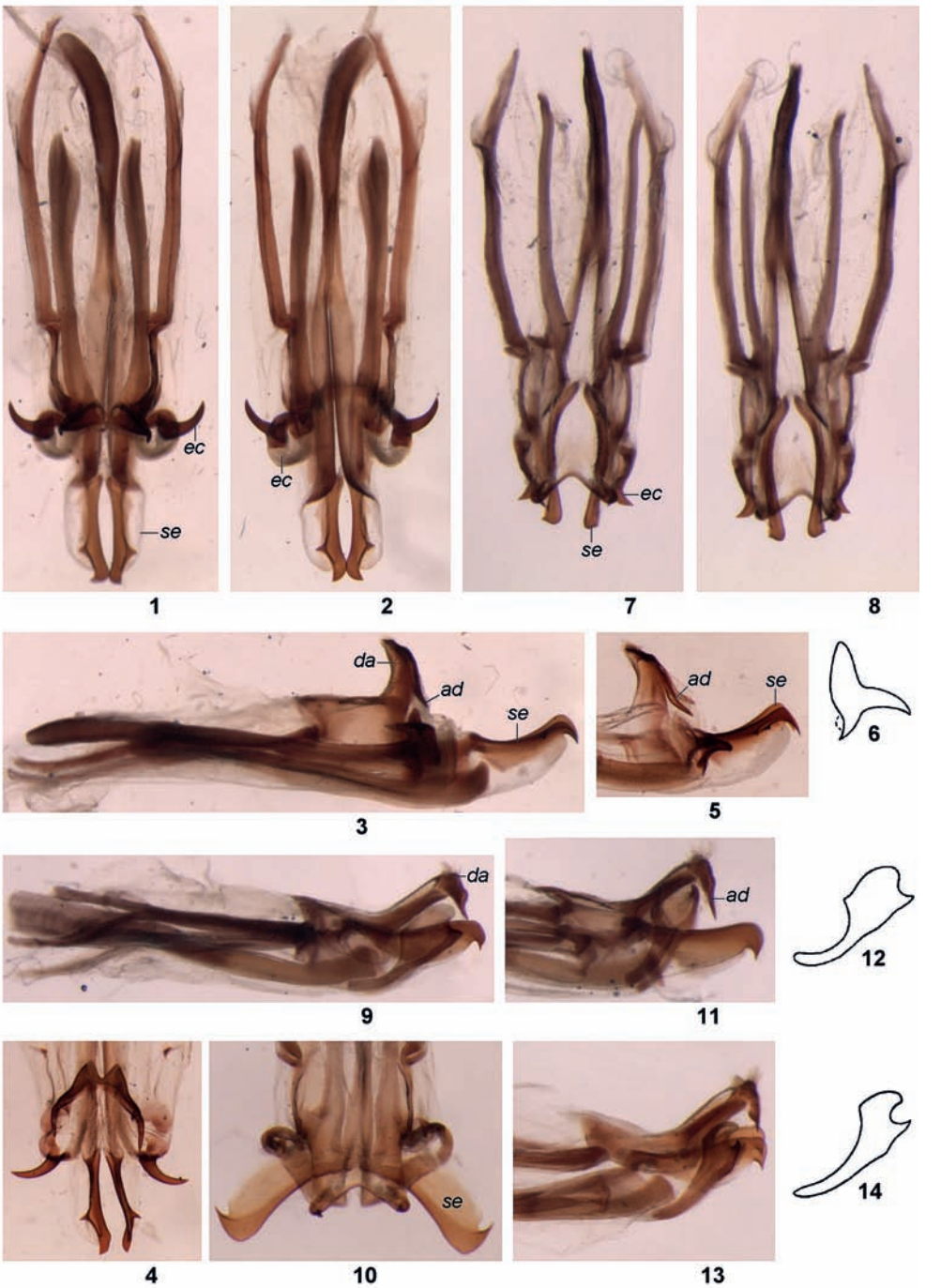

Fig. V (1–14). *Aphonomorphus*, male. **1–3**, *A. sympatricus* **sp. nov.**, holotype (ectoparameres in copulatory position); **4–6**, same species, paratype; **7–9**, **12**, *A. humilis* **sp. nov.**, holotype; **10–11**, same species, paratype (ectoparameres in copulatory position); **13–14**, *A. humilis demissus* **subsp. nov.** Genitalia from above (1, 7), from below (2, 8) and from side (3, 9); distal half of genitalia from above (4, 10) and from side (5, 11, 13); first ectoparamere from side (6, 12, 14). Abbreviations as in Fig. I (1–6).

characteristic shape of second and first ectoparameres as well as in the short dorsoapical epiphallic lobes which together with the additional sclerotised apical epiphallic processes are almost separated from the rest of epiphallus.

Aphonomorphus (*Aphonomorphus*) *humilis demissus* subsp. nov.

(Fig. V: 13, 14)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Paratypes. Two males; same data as for holotype; ZIN. Two males, two females; **Ecuador**, eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying primary forest, 2–9 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN. Male; **Ecuador**, eastern plain, ~70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying primary forest, 10–17 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Description. Male (holotype). Colouration and structure of body as in nominotypical subspecies, but area between ocelli completely darkish and first ectoparameres with distinctly shorter distal (widened) part (Fig. V: 13, 14).

Variations. Colouration of head sometimes completely light or with dasrkish stripes along edges of ocelli (as in darker paratypes of *A. humilis humilis*).

Female. General appearance practically indistinguishable from that of *A. humilis humilis*, only ovipositor slightly shorter.

Length in mm. Body: male 17–19, female 16–18; body with wings: male 26–28, female 27–29; pronotum: male 2.7–3, female 2.7–3.1; tegmina: male 17–19, female 17.5–20; hind femora: male 11–12, female 12–13; ovipositor 12–13.

Comparisons. Differences between the both subspecies of *A. humilis* are given above.

Aphonomorphus (*Aphonomorphus*) *peru* sp. nov.

(Fig. VI: 1–4)

Holotype. Male; **Peru**, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, 26–31 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of *A. ecuador*, but distinguished by following characters: antennal flagellum with almost indistinct darkish spots and distinct very light spots; darkened spots along outer ventral keel of hind femora weakly distinct (slightly lighter, smaller and sparse); distal part of dorsal and lateral tegminal fields with wide darkish stripes along each edge of cross-veins (cross-veins between these darkish stripes very light); metanotal gland having distinctly smaller area covered with long hairs (Fig. II: 10); genitalia with very small dorsoapical spines of epiphallus (these spines almost tubercle-like), characteristic shape of additional sclerotised apical epiphallic processes (*ad*) (see Fig. VI: 3, 4), lobe-like (not hook-like) distal part of first ectoparameres, distinctly asymmetrical and narrow second ectoparameres having hooked apical part and lateral tooth as in middle part of left ectoparamere as near base of right ectoparamere (Fig. VI: 1, 2).

Female unknown.

Length in mm. Body 19; body with wings 30; pronotum 2.8; tegmina 22; hind femora 12.6.

Comparisons. This new species differs from all the other members of *Aphonomorphus* s. str. in the shape of additional sclerotised apical epiphallic processes (*ad*) having distinct widening in distal half (if to see from side).

Aphonomorphus (*Aphonomorphus*) *solitarius* sp. nov.

(Fig. VI: 5–7)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with

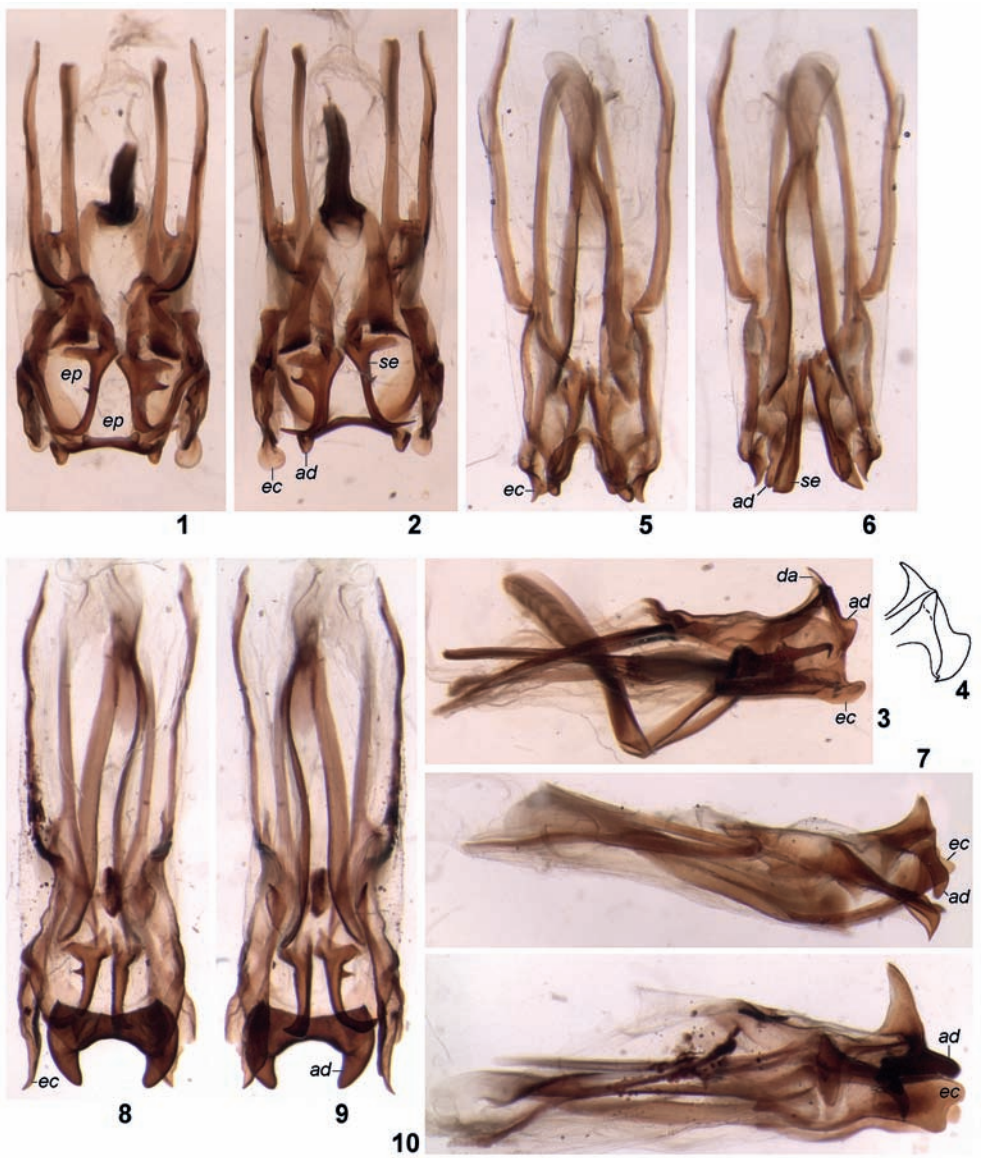

Fig. VI (1–10). *Aphonomorphus*, male. **1–4**, *A. peru* **sp. nov.** (mold of spermatophore attachment plate deformed); **5–7**, *A. solitarius* **sp. nov.**; **8–10**, *A. montanus* **sp. nov.** Genitalia from above (1, 5, 8), from below (2, 6, 9) and from side (3, 7, 10); dorsoapical spine and additional sclerotised apical process of epiphallus from side (4). Abbreviations as in Fig. I (1–6).

Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Colouration and body structure similar to those of *A. ecuador*, but distinguished by following features: general colouration slightly darker (intermediate between light brown and intensively brown); head dorsum without darker spot; antennal flagellum brown with numerous lightish spots; spots along lateral edge of dorsal tegminal field rather long

and dark brown; colouration of distal part of tegmina similar to that of *A. peru*; rest darkish marks on tegmina almost as in *A. ucayali*; hind tibiae with darkish apical part and small spot at base of spines (colouration of these spines as in *A. ecuador*); genitalia with short and angular dorsoapical lobes of epiphallus, rather thick and almost hooked additional sclerotised apical epiphallic processes (*ad*) lacking widening in distal half, lobe-like distal part of first ectoparameres, and narrow second ectoparameres having slightly hooked apical part and lacking any additional tooth (Fig. VI: 5–7).

Female unknown.

Length in mm. Body 19; body with wings 35; pronotum 3.1; tegmina 23; hind femora 13.

Comparisons. The new species is similar to the male from Bolivia pictured by Chopard (1956) as *A. telskii* (Fig. VIII: 13–15), but distinguished by the distinctly shorter dorsoapical lobes of epiphallus. However *A. telskii* was described for the syntypes from two localities: in Peru and in Brazil (Saussure, 1874). So, these syntypes and the male from Bolivia may belong to more than one species.

Aphonomorphus (*Aphonomorphus*) *montanus* sp. nov.
(Fig. VI: 8–10)

Holotype. Male; **Ecuador**, eastern slopes of Andes Mountains, ~75 km SEE of Quito City, environs of El Chaco Vill. on Rio Quijos, ~1500 m, secondary forest, 18–22 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Paratypes. Two females; **Ecuador**, eastern slopes of Andes Mountains, ~95 km E of Quito City, environs of San Rafael Waterwall on Rio Coca, ~1300 m, primary forest, 23–26 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Description. Male (holotype). Colouration and body structure similar to those of *A. ecuador*, but head dorsum with only brown area between ocelli, lower part of head (under rostrum, antennal cavities and eyes) brown excepting light brown labrum, tegmina without distinct darkish marks on lateral field and distal part of dorsal field, fore and middle femora dark brown, fore and middle tibiae and tarsi brown, apical part of hind tibiae darkish, spines of latter tibiae without darkish areas, abdomen brown excepting light brown cerci, genitalia with thick and slightly hooked additional sclerotised apical processes of epiphallus (*ad*) lacking any widening in distal half, lobe-like first ectoparameres, and narrow second ectoparameres having hooked apical part (in both ectoparameres) and lateral tooth only on left ectoparamere near its base (Fig. VI: 8–10).

Female. General appearance as in male, but one of female with distinctly smaller darkish area between ocelli and completely light hind tibiae; abdominal structures similar to those of *A. humilis*.

Length in mm. Body: male 19, female 16–19; body with wings: male 34, female 37 (hind wings of other female not completely spreading during moulting); pronotum: male 3.4, female 3.2–3.5; tegmina: male 26, female 24–28; hind femora: male 12.8, female 13–15; ovipositor 16–18.

Comparisons. The new species is most similar to *A. solitarius*, but distinguished by the dark brown fore and middle femora as well as dorsoapical epiphallic spines distinctly longer than the homologous lobes of *A. solitarius*. From "*A telskii*" studied by Chopard (1956), the new species differs in the less strongly curved apical part of dorsoapical epiphallic spines (in profile) and presence of lateral tooth on one of second ectoparameres.

Aphonomorphus (*Aphonomorphus*) *solitus* sp. nov.
(Fig. VII: 1–3)

Holotype. Male; **Peru**, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, 26–31 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Paratypes. Male; same data as for holotype; ZIN. Male; **Ecuador**, Morona Santiago Prov.,

bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). General appearance similar to that of *A. ecuador*, but epicranium dark brown with light brown both rostrum between antennal cavities and narrow areas along dorsal edge of these cavities (including small area between lateral ocellus and eye), proximal part of mandibles and palpi brown, antennal flagellum (excepting short proximal part which as in *A. ecuador*) brown with small sparse yellowish spots, pronotum brown with almost dark brown lateral lobes, spots on fore and middle tibiae larger and slightly darker, hind tibiae with darkened both apical part and spots near base of each spine, fore and middle tarsi brown with light brown proximal half of third segment, hind tarsi with darker (brown) second segment and distal part of third segment, tegmina slightly darker and with dorsal field having yellowish parts of lateral vein between dark spots and darkish oblique bands along majority of longitudinal branches. Genitalia similar to those of *A. montanus*, but distinguished by strongly hooked additional sclerotised apical processes of epiphallus (*ad*) and absence of any distinct tooth on second ectoparameres (Fig. VII: 1–3).

Variations. Colouration slightly lighter (with narrower and weakly distinct darkish oblique bands on dorsal tegminal field) or slightly darker (with almost brown femora, tibiae and hind basitarsi).

Female unknown.

Length in mm. Body 21–23; body with wings 31–33; pronotum 3.1–3.3; tegmina 22–23; hind femora 13.5–14.

Comparisons. The new species is close related to *A. solitarius* and *A. montanus* in the structure of male genitalia. From *A. solitarius*, it differs in the much longer dorsoapical spines of epiphallus, and from *A. montanus*, in the characters of male genitalia listed in the description. From *A. telskii* sensu Chopard (1956), the new species differs in the additional sclerotised apical processes of epiphallus strongly curved medially (for comparison see Figs VII: 1, 2, VIII: 13, 14).

Aphonomorphus (*Aphonomorphus*) *proximus* sp. nov.

(Fig. VII: 4–6)

Holotype. Male; **Peru**, Junin Department, Satipo Prov., ~25 km SE of Satipo Town near Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Paratype. Female; same data as for holotype; ZIN.

Description. Male (holotype). General appearance similar to that of *A. ecuador*, but head dorsum with additional narrow yellowish transverse stripe along anterior edge of dark area (this stripe including all ocelli and reaching eyes), hind tibiae with darkened marks as in *A. solitus*, fore and middle tarsi with darkish base of first and second segments, hind basitarsi with darkish both apical part and a pair of lateral longitudinal stripes, darkish stripes along tegminal crossveins more sparse and weakly distinct (excepting apical tegminal part with colouration as in *A. ecuador*), lateral tegminal field with distinct brown stripe along dorsal edge of proximal third, dorsal tegminal field with oblique darkish bands along majority of longitudinal branches, and cerci with several small darkish spots. Genitalia (Fig. VII: 4–6) most similar to those of *A. solitus*, but epiphallus with dorsoapical spines directed upwards and slightly backwards (only upwards in *A. solitus*), additional sclerotised apical epiphallic processes (*ad*) not curved medially (they curved only downwards) and without any widening in middle part, and left second ectoparamere strongly curved near base and weakly arcuate in more distal part (Fig. VII: 5) (in *A. solitus*, this ectoparamere strongly curved in distal half and almost straight in more proximal part; Fig. VII: 2).

Female. General appearance as in male, but hind femora with a longitudinal row of

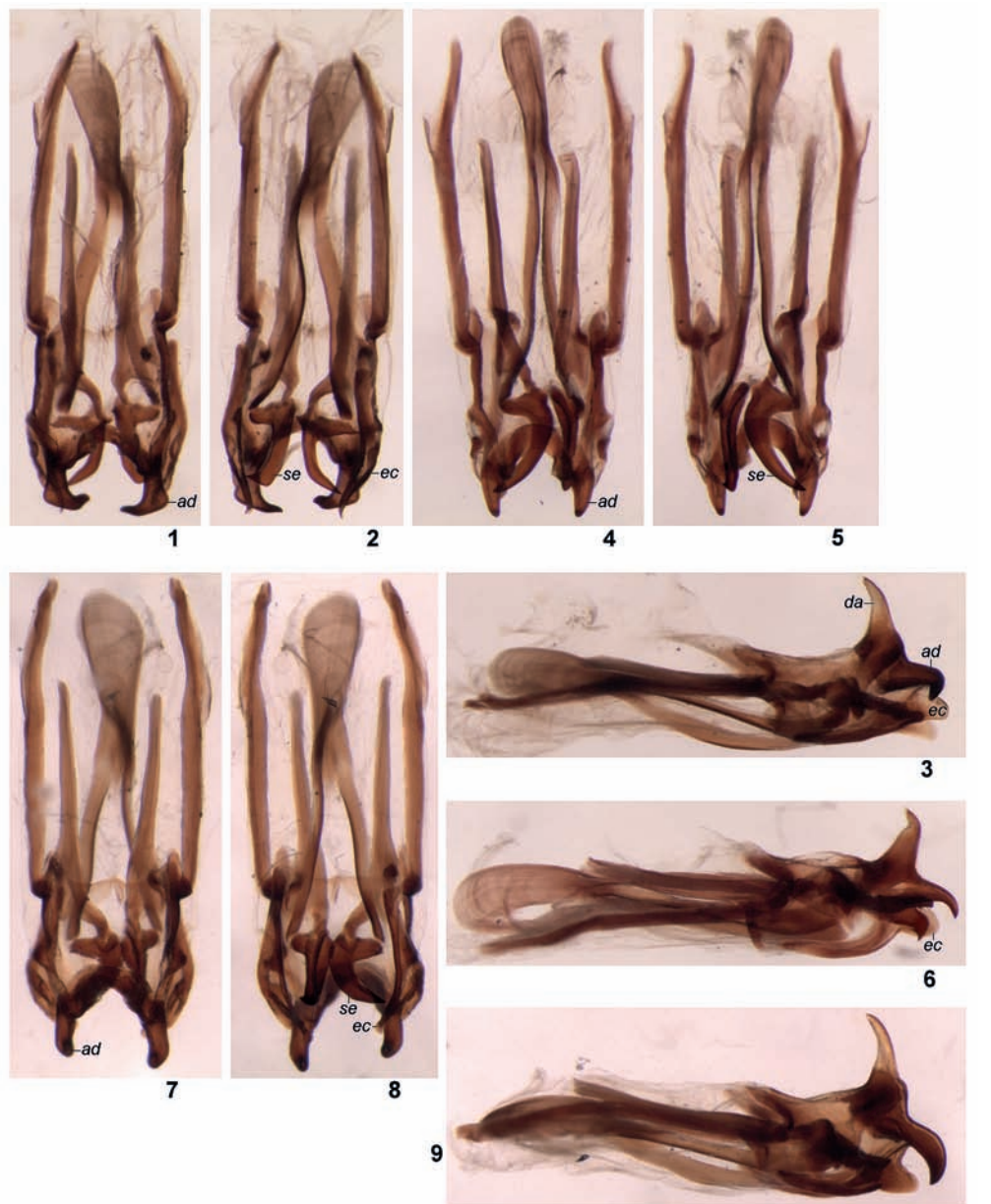

Fig. VII (1–9). *Aphonomorphus*, male. **1–3**, *A. solitus* **sp. nov.**; **4–6**, *A. proximus* **sp. nov.**; **7–9**, *A. robustus* **sp. nov.** Genitalia from above (1, 4, 7), from below (2, 5, 8) and from side (3, 6, 9). Abbreviations as in Fig. I (1–6).

small brown spots on median part of outer surface. Genital plate similar to that of *A. ecuadori*, but with somewhat wider and weakly notched apical part.

Length in mm. Body: male 21, female 17; body with wings: male 30, female 29; pronotum: male 3.2, female 3.4; tegmina: male 21.5, female 21; hind femora: male 12, female 13.3; ovipositor 18.

Comparisons. The new species is most close related to *A. solitus*; the differences between their male genitalia are listed above.

From similar *A. solitarius*, *A. montanus* and *A. telskii* sensu Chopard (1956), it differs in the long dorsoapical spines of epiphallus in combination with the second ectoparameres lacking any lateral tooth and with the additional sclerotised apical epiphallic processes (*ad*) not shorter than the dorsoapical epiphallic spines.

Aphonomorphus (*Aphonomorphus*) *robustus* sp. nov.
(Fig. VII: 7–9)

Holotype. Male; **Peru**, Junin Department, Satipo Prov., ~25 km SE of Satipo Town near Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Paratype. Two males, female; same data as for holotype; ZIN. Male; same province, environs of Satipo Town, ~800 m, secondary forest near waterfall, 4–5 Nov. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Male (holotype). General appearance similar to that of *A. ecuador*, but head dorsum dark brown with narrow yellowish transverse stripe as in *A. proximus*, lower part of epicranium (under rostral apex, antennal cavities and lower half of eyes) and proximal half of mouthparts (clypeus and proximal part of mandibles) brown, apex of maxillary palpi darkish, pronotum brown with a few small and not very distinct dark brown spots on lateral lobes, colouration of hind tibiae and tegmina almost as in *A. proximus*, hind basitarsi brown, and cerci as in *A. proximus* also. Genitalia similar to those of *A. solitarius*, *A. montanus*, *A. solitus*, *A. proximus* and *A. telskii* sensu Chopard (1956), but distinguished by distinctly shorter second ectoparameres (Fig. VII: 7–9); also these ectoparameres lacking any lateral tooth.

Variations. Some males with dark brown lower part of epicranium and colouration of outer surface of hind femora as in female of *A. proximus*; male from environs of Satipo Town with light clypeus and slightly narrower second ectoparameres.

Female. General appearance as in holotype, but apical part of hind femora distinctly darkened. Genital plate almost indistinguishable from that of *E. proximus*.

Length in mm. Body: male 18–20, female 18.5; body with wings: male 29–31, female 29; pronotum: male 3.2–3.3, female 3.2; tegmina: male 22.5–23.5, female 22; hind femora: male 14–14.5, female 13.5; ovipositor 15.7.

Comparisons. The new species differs from all the close related species in the characteristic diagnostic feature of male genitalia named in the description.

Aphonomorphus (*Aphonomorphus*) *venado* sp. nov.
(Fig. VIII: 1–3)

Holotype. Male; **Peru**, Junin Department, Satipo Prov., ~25 km SE of Satipo Town near Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Male (holotype). General appearance somewhat similar to that of *E. ecuador*, but body slightly larger, head dorsum and genae behind eyes dark brown, lower part of epicranium (under rostrum, antennal cavities and eyes) brown, clypeus and proximal half of mandibles brown, apex of maxillary palpi darkened, antennae almost completely light brown, pronotum dark brown, femora unicoloured (excepting several small darkish spots along ventral outer keel of hind femora), fore and middle tibiae with weakly distinct small darkish spots, hind tibiae with brown both apical part and spot near base of each spine, tarsi more or less brown with light brown third segment (however hind tarsi additionally with darkish apical part of latter segment), tegmina with darkish most part of each membrane in cells of dorsal and lateral fields as well as with light brown both venation of these fields and narrow stripes along each edges of veins and crossveins in these fields (excepting apical part of these fields which as in *A. ecuador* but with very light crossveins),

and cerci with distinct grayish brown spots. Genitalia similar to those of *A. solitarius*, *A. montanus*, *A. solitus*, *A. proximus*, *A. robustus* and *A. telskii* sensu Chopard (1956), but distinguished from them by distinctly longer additional sclerotised apical processes (*ad*) of epiphallus (Fig. VIII: 1–3).

Female unknown.

Length in mm. Body 20; body with wings 35; pronotum 3.8; tegmina 27; hind femora 14.

Comparisons. The new species distinctly differs from all the close related species in the character of male genitalia mentioned in the description.

Aphonomorphus (*Aphonomorphus*) *morona* sp. nov.
(Fig. VIII: 4–6)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). General appearance similar to that of *A. ecuador*, but antennae almost completely unicoloured (light brown), legs with less distinct spots on femora and tibiae (hind femora almost without spots on ventral outer keel), dark spots along lateral edge of dorsal tegminal field very small, lateral tegminal field without distinct darkish marks, apical part of tegmina with only small darkish parts of veins, dorsal part of abdominal tergites darkish, and cerci with very small darkish marks. Genitalia with widened (lamellar) proximal half of first ectoparameres, almost spine-like distal half of them, long dorsoapical spines of epiphallus, thin and arcuate additional sclerotised apical epiphallic processes (*ad*) having ventral angular projection near base (these processes situated between lamellar parts of first ectoparameres and covered with them in profile; Fig. VIII: 6), right second ectoparamere having two acute apices, and left second ectoparamere provided with widened lamellar apical plate (Fig. VIII: 4–6).

Female unknown.

Length in mm. Body 20; body with wings 29.5; pronotum 3; tegmina 21.5; hind femora 13.

Comparisons. The new species is most similar to *A. adjunctus* (Fig. VIII: 7–9) in the structure of male genitalia; it differs from the latter species in the longer rami, much longer endoparameral apodemes, narrower proximal half of first ectoparameres (if to see from side), less strongly curved additional sclerotised apical processes of epiphallus (*ad*), and less thin and almost not arcuate distal part of first ectoparameres. From *A. schunkei* (Fig. VIII: 10, 11) related to these congeners, the new species differs in the distinctly shorter second ectoparameres; from *A. stipatus* (Fig. VIII: 12) also possibly related to these congeners, in the clearly narrower distal half of dorsoapical epiphallic spines in profile; and from *A. socius* (Fig. VIII: 16) with unclear position among representatives of this subgenus, in the symmetrical both first ectoparameres and epiphallic structures.

Aphonomorphus (*Euaphonus*) *peruvianus* (Saussure, 1874)
(Fig. IX: 1–4)

Material examined. Male; **Peru**, Junin Department, Satipo Prov., ~25 km SE of Satipo Town, environs of Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN. Two females; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Redescription. Male more or less in accordance to original description (Saussure, 1874) and to pictures of male genitalia by Chopard (1956) and Desutter (1988). It light brown with following marks: characteristic dark border around antennal cavities as well as dark area between these cavities and lateral ocelli (this area with rather narrow dark tongue reaching to eyes); almost indistinct darkish dots on different

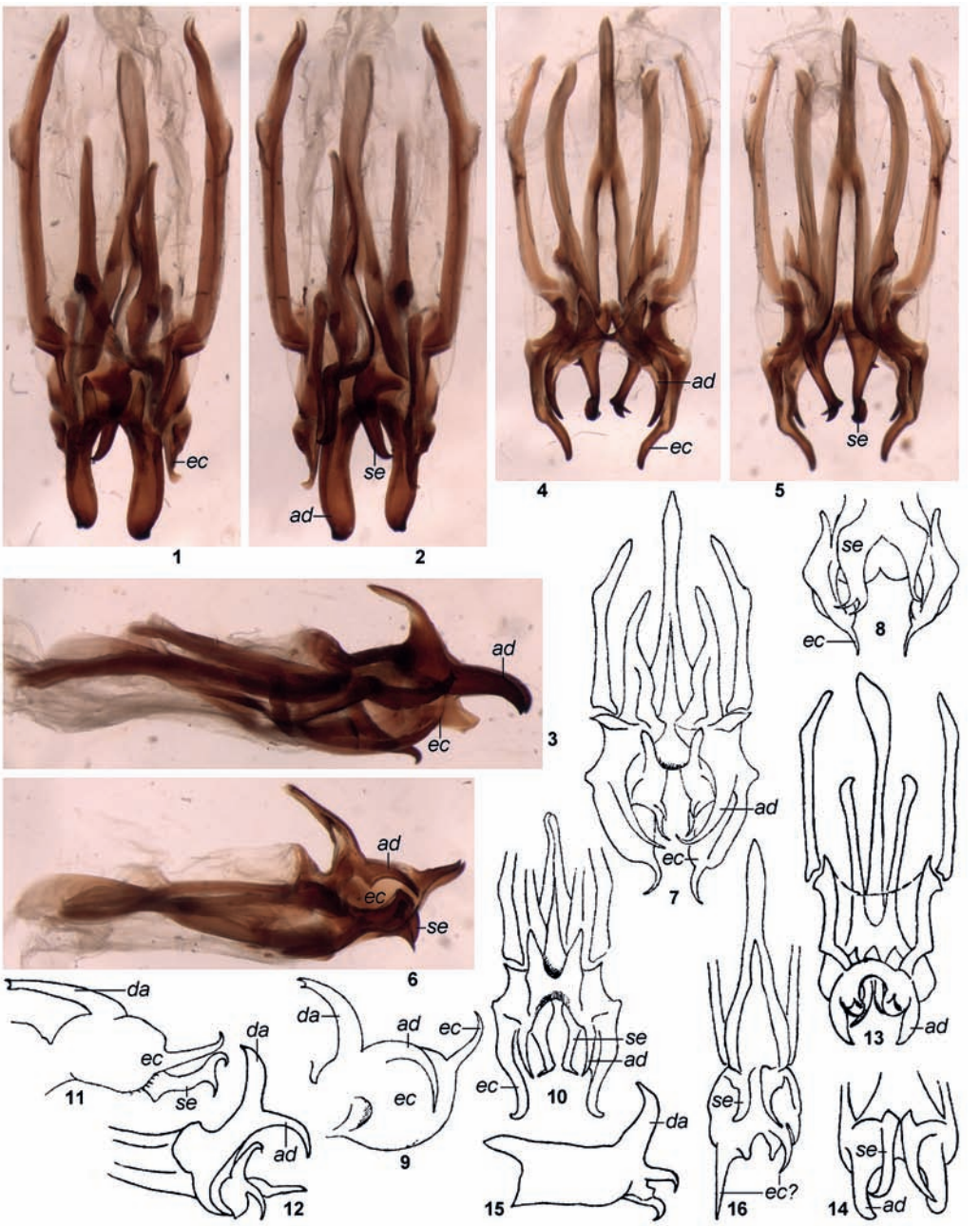

Fig. VIII (1–16). *Aphonomorphus*, male. **1–3**, *A. venado* **sp. nov.**; **4–6**, *A. morona* **sp. nov.**; **7–9**, *A. adjunctus*; **10–11**, *A. schunkei*; 12, *A. stipatus*; 13–15, *A. ?telskii*; 16, *A. socius*. Genitalia from above (1, 4, 7, 10, 13), from below (2, 5, 16) and from side (3, 6); distal half of genitalia from below (8, 14) and from side (9, 11, 12, 15). [7–16, after Chopard (1956).] Abbreviations as in Fig. I (1–6).

parts of body and more distinct (brown) small spots along both ventral outer keel of hind femora and lateral edge of dorsal tegminal field; very light membranes and grayish brown venation in lateral and dorsal fields of tegmina (latter field with partly darkish membranes along majority of oblique longitudinal branches); anal plate and dorsal part of abdominal tergites almost dark brownov. Ocelli in this male rather large (almost as in *E. cuyabeno*; see Fig. II: 3), and rostrum between antennal cavities slightly narrower than scape; fore tibiae with only inner slit-like tympanum; other characters of body structure (excepting male genitalia; Fig. IX: 1–4) similar to those of nominotypical subgenus.

General appearance of two females from Ecuador (probably belonging to this species) very similar to that of male (including characteristic dark marks on head), but they somewhat larger and with hardly darkened lower part of hind femora; distal half of their genital plate is narrowing to apex and with rather narrow and distinctly notched apex; their ovipositor very similar to that of *A. ecuador*.

Length in mm. Body: male 16, female 20–21; body with wings: male 28, female 33–35; pronotum: male 2.6, female 3.1–3.3; tegmina: male 21, female 23–24; hind femora: male 10.8, female 12–13; ovipositor 14–15.

Aphonomorphus (*Euaphonus*) *fuscus* sp. nov.

(Fig. IX: 5–7)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). General colouration dark brown with following lighter marks: ocelli grayish; head dorsum and pronotal disc grayish brown; spines of hind tibiae almost light brown; dorsal field of tegmina brown with small dark brown spots along lateral edge and partly whitish membranes on median part of areas between oblique longitudinal branches; lateral tegminal field with somewhat lighter venation (than cell membranes) in distal part and light spots along border with transparent intercalary triangle; metanotum and first abdominal tergite as well as cerci brown with reddish yellow hairs of metanotal gland. Other characters similar to those of *A. peruvianus*, but genitalia with very asymmetrical second ectoparameres: right ectoparamere wide, oriented horizontally and divided into three lobes (two lateral lobes long, thin, hooked and with acute apex; median one shorter, slightly curved and with rounded apex); left ectoparamere narrower, oriented vertically and provided with thin and slightly hooked apical process as well as with less long and angular (in profile) dorsal process (Fig. IX: 5–7).

Female unknown.

Length in mm. Body 19; body with wings 30; pronotum 3.1; tegmina 22; hind femora 12.

Comparisons. The new species is most similar to *A. peruvianus*, but clearly differs from it in the colouration significantly darker and right second ectoparamere of male genitalia divided into three characteristic lobes.

Aphonomorphus (*Euaphonus*) *dilutus* sp. nov.

(Fig. IX: 8–10)

Holotype. Male; **Columbia**, "Penas Blancos, Rio Magdalena, Colum., Woronov", 29 May 1926; ZIN.

Paratypes. Two males; same data as for holotype, but 25–29 May 1926; ZIN. Female; **Ecuador,** Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Colouration light brown, practically unicoloured (without darkened marks on head, wings, legs and other body parts). Ocelli hardly smaller than in *A. peruvianus* and *A. fuscus*; rostrum between antennal cavities approximately equal to scape in width; other body

Fig. IX (1–10). *Aphonomorphus*, male. **1–4**, *A. peruvianus*; **5–7**, *A. fuscus* **sp. nov.**; **8–10**, *A. dilutus* **sp. nov.** Genitalia from above (1, 5, 8), from below (2, 6, 9) and from side (3, 7, 10); distal half of genitalia from side (4). Abbreviations as in Fig. I (1–6).

structures (excepting genitalia) also as in these two species. Genitalia (Fig. IX: 8–10) with left first ectoparamere having two long processes at apex (one of them shorter and directed backwards, but second process distinctly longer and directed more or less forwards); right first ectoparamere shorter and with one apical spine which slightly S-shaped (if to see from above); second ectoparameres strongly asymmetrical (left one thin and almost acute at apex; right ectoparamere much wider, slightly longer and with almost rounded apex having small angular projection medially).

Variations. Paratypes slightly lighter (almost yellowish) and with less sclerotised genitalia (these specimens possibly catching shortly after moulting).

Female. General appearance almost as in holotype, but lateral and lower parts of head, of thorax and of abdomen as well as of tegmina in rest position hardly lighter (yellowish). Structures of abdominal apex similar to those of *A. peruvianus*.

Length in mm. Body: male 21–23, female 19; body with wings: male 29–31, female 30; pronotum: male 2.9–3, female 3.1; tegmina: male 20–21.5, female 22; hind femora: male 12.5–13, female 12.3; ovipositor 10.5.

Comparisons. The new species is well distinguished from *A. peruvianus* and *A. fuscus* by the lighter unicoloured colouration as well as presence of two processes at the apex of left first ectoparamere and wide and undivided distal half of right second ectoparamere.

Aphonomorphus (*Euaphonus*) *atalaya* sp. nov.

Holotype. Female; **Peru**, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, 26–31 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Female (holotype). Body distinctly larger than in other representatives of this subgenus. Colouration brown with very dark brown (almost blackish) rostrum between antennal cavities and area between ocelli (these dark areas fused with each other), light brown ocelli and mouthparts (excepting brown palpi), dark brown spot on each gena and lower half of lateral lobes of pronotum, reddish yellow parts of lateral edge of dorsal tegminal field (these parts situated between small dark spots of this edge), reddish vein along proximal half of dorsal edge of lateral tegminal field, and almost dark brown upper part of lateral tegminal field and lower half of hind tibiae. Structure of ocelli and head rostrum very similar to that of *A. peruvianus*; inner tympanum slit-like; oblique longitudinal branches of dorsal tegminal field weakly distinct; genital plate and ovipositor almost as in *A. peruvianus*.

Male unknown.

Length in mm. Body 23; body with wings 38; pronotum 3.9; tegmina 26; hind femora 15.2; ovipositor 19.

Comparisons. The new species differs from all the other representatives of the same subgenus in the dark rostrum, area between ocelli, upper part of lateral tegminal field and lower half of hind tibiae (which are rather clearly darker than the other parts of head, of tegmina and of hind tibiae) as well as larger size of body and longer ovipositor (the latter structure is almost 1.25 times as long as hind femur, but in all the other related species with known female, ovipositor is less than 1.17 times as long as hind femur or shorter).

Aphonomorphus (*Furcaphonus*) *satipo* sp. nov.

(Fig. X: 1–4)

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, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Paratype. Male; same data as for holotype; ZIN.

Description. Male (holotype). Colouration light brown with a pair of darkish

transverse lines on each eye, brown dots on pronotal lateral lobes and legs, darkish crossveins on lateral tegminal field, brown both narrow stripe along proximal half of tegminal R and majority of veins and veinlets of dorsal tegminal field (oblique longitudinal veins of this field forming 7–8 slightly darker oblique zigzag lines), and yellowish lower part of body. Ocelli large, rounded, contacting with each other, approximately equal to each other in size; rostrum between antennal cavities slightly wider than scape. Structure of pronotum, metanotal gland, tympana, and anal and genital plates more or less similar to that of *A. ecuadori*; genitalia (Fig. X: 1–4) with epiphallus arcuately curved upwards and gradually narrowing to a pair of dorsoapical lobes; these lobes short and separated from each other by narrow and not deep median notch; first ectoparameres with long spine-line processes having more or less equal length and rather narrow space between them (Fig. X: 2, 4); second ectoparameres lamellar, semimembranous, rather narrow, distinctly asymmetrical (right larger than left), and with a small denticle not far from apex.

Variations. Paratype slightly darker: dorsum of head and disc of pronotum almost brown; eyes with rather large additional darkish areas in dorsal part and in ventral half.

Female unknown.

Length in mm. Body 16; body with wings 24; pronotum 2.6; tegmina 18; hind femora 11.

Comparisons. The new species is similar to *A. allardi*, but epiphallus is less strongly arcuate in profile, and space between the spine-like processes of first ectoparameres is distinctly narrower (for comparison see Fig. X: 4, 5).

Aphonomorphus (*Furcaphonus*) *vulgatus* sp. nov.

(Fig. X: 6–9)

Holotype. Male; **Ecuador**, eastern plain, 80–85 km E of Lago Agrio Town, environs of Lago Grande (lake) on Rio Cuyabeno, very lowlying primary forest, 2–9 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Paratype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of *A. satipo*, but eyes almost unicoloured (without distinct marks), pronotum with grayish brown dorsal half having several lighter marks and a few darkish dots along anterior and posterior edges, and rostrum between antennal cavities slightly narrower (almost equal to scape in width). Genitalia (Fig. X: 6–9) distinguished from those of *A. satipo* and *A. allardi* by epiphallus almost angularly curved in profile (proximal part of epiphallus before curvature short, its distal part after curvature directed practically only upwards; Fig. X: 8, 9), dorsoapical epiphallic lobes long and separated from each other by deep and moderately wide notch, first ectoparameres with spine-like processes somewhat shorter and with space between these processes much wider (for comparison see Fig. X: 4, 5, 9), and second ectoparameres much wider (Fig. X: 6, 7).

Variations. Paratype with more unicoloured (completely light brown) pronotum, weakly distinct darkish dots on legs, and slightly wider darkened stripe along tegminal R.

Female unknown.

Length in mm. Body 17–18; body with wings 25–27; pronotum 2.5; tegmina 18–19; hind femora 10.5–10.8.

Comparisons. The new species differs from *A. satipo* and *A. allardi* in the characters of male genitalia listed above.

Aphonomorphus (*Furcaphonus*) *simulator* sp. nov.

(Fig. XI: 1–4)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with

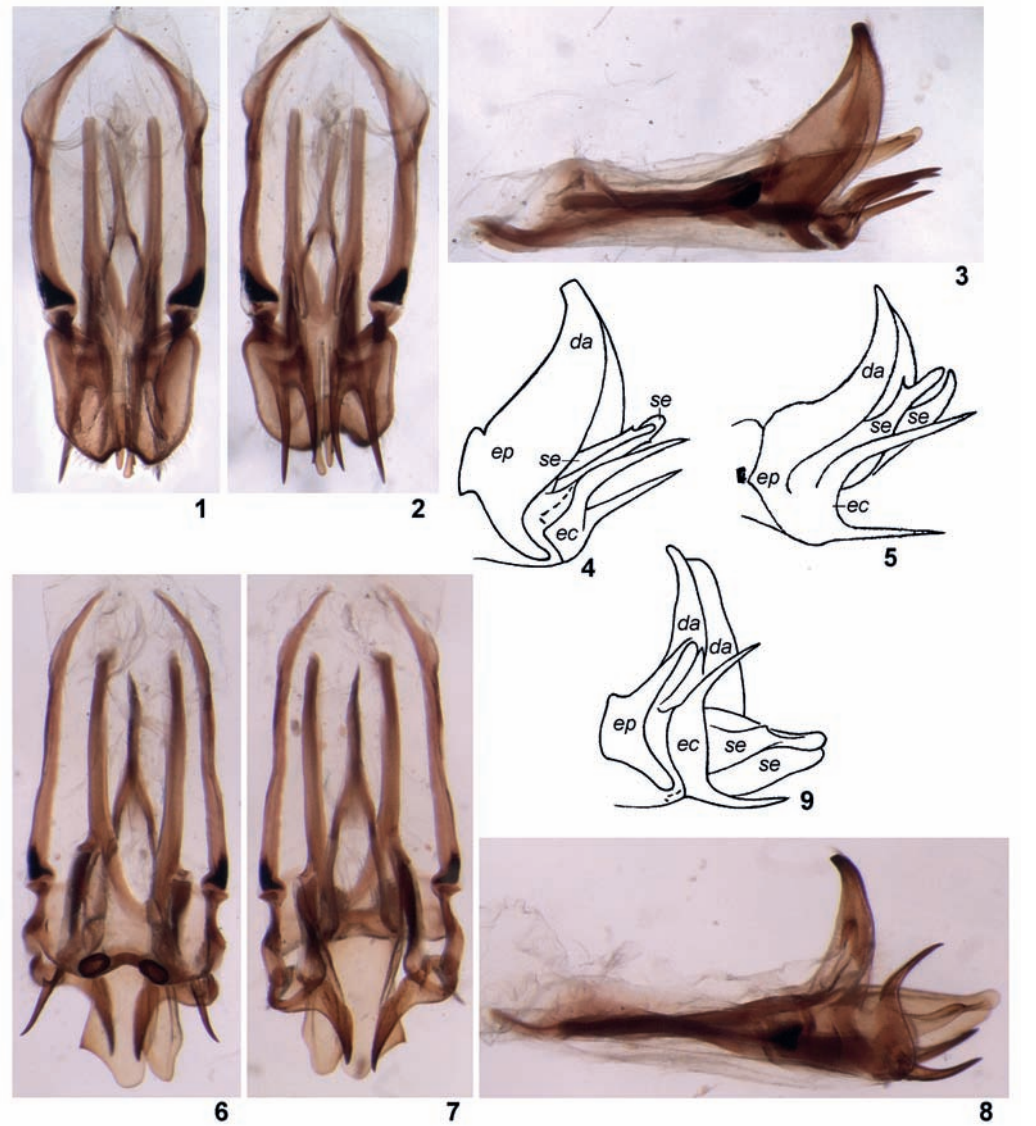

Fig. X (1–9). *Aphonomorphus*, male. **1–4**, *A. satipo* **sp. nov.**; **5**, *A. allardi*; **6–9**, *A. vulgatus* **sp. nov.** Genitalia from above (1, 6), from below (2, 7) and from side (3, 8); epiphallus, second ectoparameres and left first ectoparamere from side and slightly from behind (4, 5, 9). [5, after Chopard (1956).] Abbreviations as in Fig. I (1–6).

Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of *A. satipo*, but eyes almost unicoloured, lateral lobes of pronotum with less distinct darkish dots, lateral tegminal field with only light brown venation, and genitalia more similar to those of *A. vulgatus*, but distinguished from them by following characters: distal part of epiphallus (after strong curvature) less straight and less vertical in profile, first ectoparameres with distinctly

longer basal part (before upper spine-like process), lower spine-like process of these ectoparameres much shorter than upper one, second ectoparameres with narrower apical part (Fig. XI: 1–4).

Female unknown.

Length in mm. Body 18; body with wings 27; pronotum 2.4; tegmina 18; hind femora 11.

Comparisons. The new species is most similar to *A. vulgatus* in the structure of male genitalia, but distinguished by the characters listed above. From *A. satipo* and *A. allardi*, it differs in the clearly different length of processes of second ectoparameres.

Aphonomorphus (*Furcaphonus*) *amazon* sp. nov.

(Fig. XI: 5–8)

Holotype. Male; **Peru**, Loreto Department, 50–60 km S of Ikitos City, forest between San Juaquin Vill. on Rio Amazon and Puente Itaya [bridge on Rio Itaya], 3 Feb. 2006; coll. NOV. Kluge; ZIN.

Description. Male (holotype). Colouration and structure of body similar to those of holotype of *A. satipo*, but upper half of head and of pronotum grayish brown, colouration of eyes as in paratype of this species, ocelli whitish, scape with slight darkish spots, tegmina with light crossveins of lateral field and majority of veinlets of dorsal field, dorsal part of abdomen brown with yellowish median stripe, ocelli slightly smaller (median one distinctly transverse), genitalia similar to those of *A. simulator*, but distinguished by following features: distal part of epiphallus (behind strong curvature) almost completely vertical in profile (as in *A. vulgatus*), first ectoparameres longer and with longer spine-like processes (especially lower one), second ectoparameres distinctly longer also (Fig. XI: 5–8).

Female unknown.

Length in mm. Body 16; body with wings 24; pronotum 2.5; tegmina 24; hind femora 10.7.

Comparisons. The new species differs from *A. simulator* in the characters of male genitalia listed above; from *A. vulgatus*, in the much longer proximal part of first ectoparameres; from *A. satipo* and *A. allardi*, in the distinctly different shape of both epiphallus and first ectoparameres in profile.

Aphonomorphus (*Furcaphonus*) *elongatus* sp. nov.

(Fig. XII: 1–4)

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, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Paratype. Male; same data as for holotype; ZIN.

Description. Male (holotype). Colouration light brown with following marks: head dorsum, pronotal disc and dorsum of pterothorax brown; scape and rostrum between antennae slightly lighter than head dorsum; eyes and small areas behind ocelli dark brown; venation of lateral tegminal field as well as ventral part of body yellowish; dorsal tegminal field with weak (but distinct) brown oblique stripes along oblique longitudinal veins; membranes of lateral tegminal part almost transparent. Structure of body similar to that of *A. satipo*, but ocelli slightly smaller and genitalia somewhat different: dorsoapical part of epiphallus directed forwards and divided into two rather long and wide lobes separated from each other by rather narrow median notch (Fig. XII: 1); first ectoparameres with strongly curved (in profile) upper sclerotised part having apical spine-like process, and with slightly arcuate (if to see from below) and lobe-like lower apical process (Fig. XII: 2–4); second ectoparameres asymmetrical (left one with rather large, rounded, lamellar lobe) and with two ventral subapical denticles (Fig. XII: 1, 3, 4).

Variations. Paratype without distinct dark brown areas on head, with a few light brown obliquely transverse stripes on eyes, and with almost dark brown pronotal disc.

Female unknown.

Fig. XI (1–8). *Aphonomorphus*, male. **1–4**, *A. simulator* **sp. nov.**; **5–8**, *A. amazon* **sp. nov.** Genitalia from above (1, 5), from below (2, 6) and from side (3, 7); epiphallus, second ectoparameres and left first ectoparamere from side and slightly from behind (4, 8). Abbreviations as in Fig. I (1–6).

Length in mm. Body 15.5–16; body with wings 26–28; pronotum 2.7–2.8; tegmina 20–21; hind femora 10.5–10.8.

Comparisons. The new species differs from all the other known species of this subgenus in the characteristic shape of dorsoapical lobes of epiphallus: these lobes widened at base and directed forwards.

Aphonomorphus (*Furcaphonus*) *woronovi* sp. nov.

(Fig. XII: 5–7)

Holotype. Male; **Columbia**, "Penas Blancos, Rio Magdalena, Colum., Woronov", 1 May 1926; ZIN.

Description. Male (holotype). Colouration light brown with yellowish ventral part

of body and almost transparent membranes of lateral tegminal field (darkish oblique lines on dorsal tegminal field practically indistinct). Structure of body similar to that of *A. satipo*, but ocelli and genitalia similar to those of *A. elongatus*; however genitalia distinguished from those of latter species by dorsoapical epiphallic lobes distinctly narrower (if to see from above) and directed partly upwards and partly forwards (in profile), by notch between these lobes much wider, by first ectoparameres with clearly shorter upper spine-like process, and by second ectoparameres almost symmetrical (Fig. XII: 5–7).

Female unknown.

Length in mm. Body 16.5; body with wings 22; pronotum 2.4; tegmina 15.5; hind femora 9.5.

Comparisons. The new species is most related to *A. elongatus*, but distinguished by the genital characters listed above. From all the other species of *Furcaphonus*, the new species differs in the shape of first ectoparameres (similar to that of *A. elongatus*) and position of dorsoapical epiphallic lobes (directed partly forwards).

Aphonomorphus (*Furcaphonus*) *fasciatus* sp. nov.

(Fig. XII: 8–10)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Paratype. Male; same data as for holotype; ZIN.

Description. Male (holotype). Coloration light brown with following pattern: head dorsum, areas on scapes, upper half of pronotum, pterothoracic dorsum, fore tibiae, distal part of ventral half of hind tibiae, venation of dorsal tegminal field, and rather wide and distinct oblique stripes along oblique longitudinal veins of this field brown; several not large spots on dorsal tegminal field (along its lateral edge) and small spots at base of hind tibial spines dark brown; membranes of lateral tegminal field almost transparent. Structure of body similar to that of *A. satipo*, excepting ocelli and genitalia which similar to those of *A. elongatus*, but latter organ distinguished by smaller dorsoapical epiphallic lobes directed partly upwards and partly forwards, somewhat shorter upper spine-like process of first ectoparameres, and almost symmetrical second ectoparameres (Fig. XII: 8–10).

Variations. Paratype with distinct additional grayish spots on lower part of epicranium under both rostral apex and antennal cavities.

Female unknown.

Length in mm. Body 17–18; body with wings 25–28; pronotum 2.5–2.6; tegmina 16–18; hind femora 10–10.5.

Comparisons. The new species is most similar to *A. elongatus*, but distinguished by the male genital characters listed above. From *A. woronovi*, also similar to these species, the new species differs in the much narrower notch between dorsoapical lobes of epiphallus.

Aphonomorphus (*Lobaphonus*) *distinctus* sp. nov.

(Fig. XIII: 1–3)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Coloration light brown with yellowish lower part of body (lower half of head and of pterothorax, coxae, abdominal sternites, genital plate, and cerci), weakly darkish most part of tegminal venation and small spots on some other parts of body (on dorsal surface of scapes, on femora and on tibiae), darker (brown) narrow area between eyes along hind edges of ocelli as well as several rather small spots on pronotum along its anterior edge and on dorsal tegminal field along its lateral edge, and brownish grey areas at base of dorsal part of abdomen as well as a few small stripes on dorsal surface

Fig. XII (1–10). *Aphonomorphus*, male. **1–4**, *A. elongatus* **sp. nov.**; **5–7**, *A. woronovi* **sp. nov.**; **8–10**, *A. fasciatus* **sp. nov.** Genitalia from above (1, 5, 8), from below (2, 6, 9) and from side (3, 4, 7, 10). Abbreviations as in Fig. I (1–6).

of cerci. External structure of body similar to that of *A. ecuadori*, but lateral ocelli only slightly larger than median ocellus, rostrum between antennal cavities hardly narrower than scape, and pronotal disc with moderately short hind median projection; genitalia (Fig. XIII: 1–3) with rather short and comparatively thin dorsoapical spines of epiphallus, with dorsoventrally flattened (almost lamellar) large median apical epiphallic lobe lacking any median notch at apex, with rather large and more or less sclerotised first ectoparameres having characteristic apical hook, with thin and almost completely sclerotised second ectoparameres, and with long apodeme of mold of spermatophore attachment plate.

Female unknown.

Length in mm. Body 21; body with wings 36; pronotum 3.6; tegmina 26; hind femora 16.

Comparisons. Differences of the new species from all the other known congeners (with the male genitalia studied) are given in the subgeneric key for the genus *Aphonomorphus*.

Aphonomorphus (*Lobaphonus*) *mirus* sp. nov.

(Fig. XIII: 4–9)

Holotype. Male; **Peru**, Loreto Department, bank of Rio Morona near its mouth and not far from Puerto America Town, ~200 m, partly primary / partly secondary forest, 20–23 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Colouration and structure of body very similar to those of *A. distinctus*, but genitalia clearly different (Fig. XIII: 4–6): epiphallus almost membranous, with slightly longer and much thicker dorsoapical lobes (instead dorsoapical spines) as well as with wider and much higher (not flattened) large median apical lobe having very narrow median notch at apex; first ectoparameres very small (almost scale-like) and semimembranous (Fig. XIII: 7, 8); second ectoparameres situated in middle part of genitalia (not as in *A. distinctus* and other known congeners having them in distal part of genitalia), consisting of very large membranous (sac-like) ventral part and narrow sclerotised dorsal part (Fig. XIII: 7, 9); mold of spermatophore attachment plate with rather short apodeme.

Female unknown.

Length in mm. Body 20; body with wings 35; pronotum 3.5; tegmina 25; hind femora 15.3.

Comparisons. Differences of the new species from *A. distinctus* is given above, and from the other congeners with the genitalia studied, in the subgeneric key for the genus *Aphonomorphus*.

Aphonomorphus (*Minaphonus*) *gusarovi* sp. nov.

(Fig. XIII: 10–13)

Holotype. Male; **French Guyana**, "le 16ème km route de St. Blie", 5°17′N, 53°03′W, 50 m, forest, 3–6 Jul. 1995; coll. V. Gusarov; ZIN.

Description. Male (holotype). Body somewhat smaller than in majority of other species of this genus. Colouration brownish grey with following marks: head with 7 slight, light and very narrow longitudinal stripes on hind half of dorsal surface; lower part of epicranium light brown with several small greyish spots and stripes; eyes with 3 longitudinal reddish stripes in upper half; mouthparts yellowish with brownish distal half of maxillary palpi; apical part of rostrum with 3 whitish dots (median one at apex of rostrum; a pair of lateral dots slightly under this apex and contacting with antennal cavities); median ocellus and small spots between lateral ocelli and eyes yellow; lateral ocelli almost transparent; scapes spotted (with several dark brown and light brown small areas); rest of antennae brownish with brown (almost dark brown) spots at base of this antennal part; pronotum with a few small lightish spots along lateral edges of disc and several such spots on lower half of lateral lobes; legs light brown with numerous small brown and dark brown spots on femora and tibiae as well as with darkened ventral part of basitarsi, dark second tarsal segment and darkish spot on distal

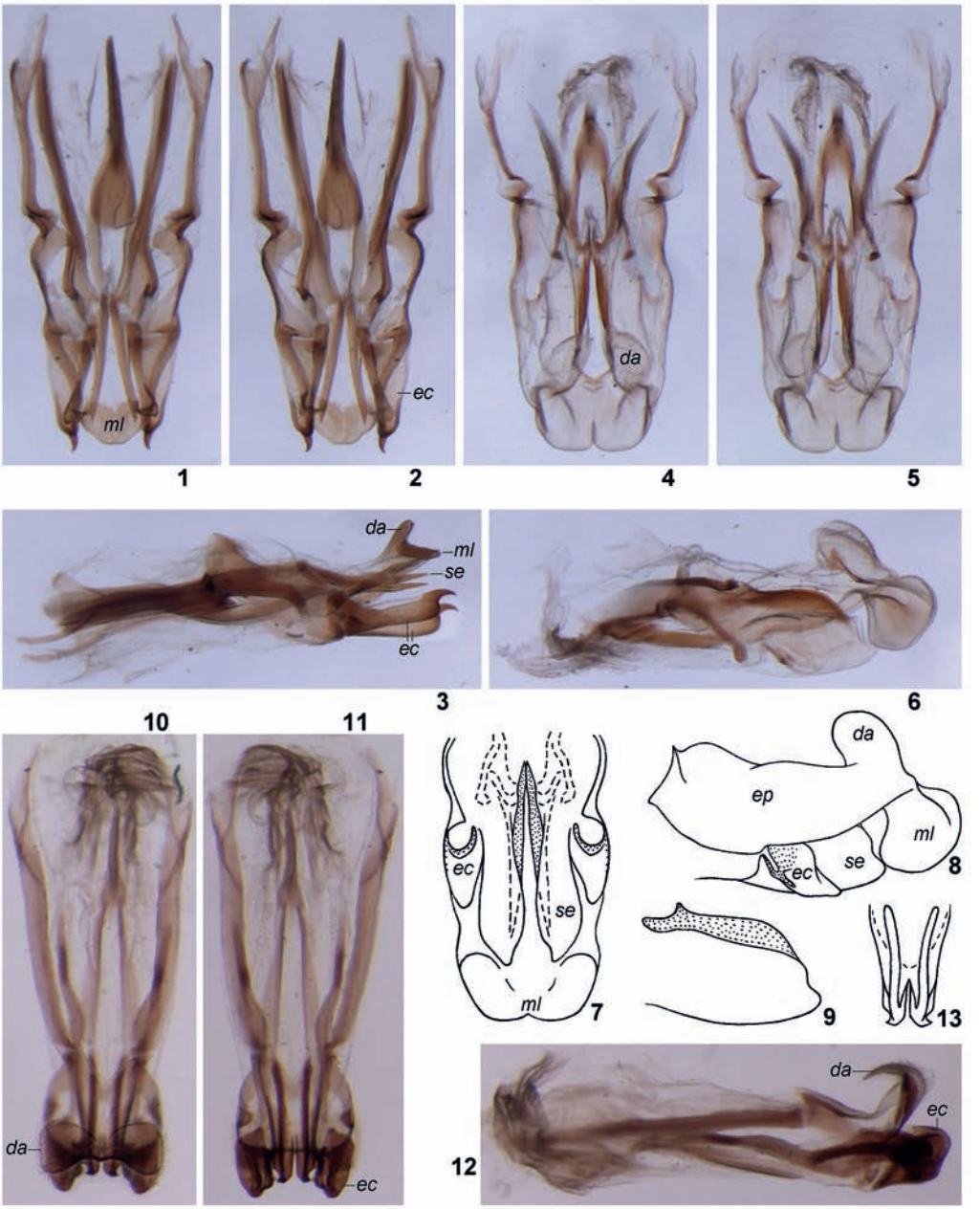

Fig. XIII (1–13). *Aphonomorphus*, male. **1–3**, *A. distinctus* **sp. nov.**; **4–9**, *A. mirus* **sp. nov.**; **10–13**, *A. gusarovi* **sp. nov.** Genitalia from above (1, 4, 10), from below (2, 5, 11) and from side (3, 6, 12); genitalia without proximal part (more or less sclerotised parts covered with dots) from below (7) and from side (8); second ectoparamere (sclerotised part covered with dots) from side (9); guiding rod from below (13). Abbreviations: *ml*, median lobe of epiphallic apical part; other abbreviations as in Fig. I (1–6).

half of third tarsal segment; tegmina with brown venation of lateral field, dark brown venation of dorsal field and several longitudinal stripes on dorsal field along its lateral edge, whitish stripes between previous dark stripes, and yellowish grey membranes of lateral field; sternites of thorax and abdomen as well as genital plate yellowish; dorsal part of abdomen almost completely brown (including anal plate); lateral part of abdominal tergites and cerci spotted (with small brown and light brown areas). External structure of body similar to that of *A. ecuador*, but ocelli and pronotum almost as in *A. distinctus*; genitalia (Fig. XIII: 10–13) with guiding rod only partly divided into a pair of second ectoparameres, with rather large (but not long) first ectoparameres lacking any apical hook, and with membranous dorsoapical lobes (instead dorsoapical spines) of epiphallus which transversally flattened, strongly curved forwards and having numerous hairs.

Female unknown.

Length in mm. Body 15; body with wings 23; pronotum 2.5; tegmina 14.2; hind femora 10.5.

Comparisons. The new species is most similar to *A. griseus*, but distinguished by the distinctly longer wings (both the species are with the equal length of pronotum, however in *A. griseus*, the length of body with hind wings 18.5 mm, but in the new species, 23 mm). From all the other congeners with the genitalia studied, the new species differs in the guiding rod only partly divided into a pair of second ectoparameres (see also the subgeneric key for the genus *Aphonomorphus*).

Aphonomorphus (*Neoaphonus*) *deviatus* sp. nov.

(Fig. XIV: 1–4)

Holotype. Male; **Peru**, Loreto Department, bank of Rio Morona near its mouth and not far from Puerto America Town, ~200 m, partly primary / partly secondary forest, 20–23 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Body of intermediate size between *A. gusarovi* and majority of other congeners. Colouration light brown with following marks: head with brown dorsal surface and rostral apex as well as dark brown transverse stripe between eyes along hind edges of ocelli; ocelli and small spots between lateral ocelli and eyes reddish yellow; mouthparts yellowish with whitish labrum and light brown maxillary palpi; hind femora with a few small brown spots along distal half of outer ventral keel; hind tibiae with blackish dots at base of all articulated spines; tegmina with dark brown stripes on dorsal field along its lateral edge and with yellowish membranes of lateral field; dorsal part of abdomen almost completely brown (including anal plate); sternites of thorax and abdomen as well as cerci yellowish, but latter ones with brownish stripes on dorsal surface. External structure of body similar to that of *A. ecuador*, but ocelli almost as in *A. distinctus*, fore tibiae with almost open (but immersed) tympanum on only inner side of left leg and without tympana on right leg (latter leg shorter and possibly restored after its missing in larva); genitalia (Fig. XIV: 1–4) with only a pair of rather large semimembranous dorsoapical lobes (instead dorsoapical spines) at distal part of epiphallus, with rather short first ectoparameres having comparatively thin distal hook and rather large proximal part angularly projecting backwards under this hook, with rather short and thin most part of second ectoparameres which asymmetrically curved and having hook-like distal part, and with rather wide mold of spermatophore attachment plate having long and asymmetrically curved apodeme.

Female unknown.

Length in mm. Body 16; body with wings 27; pronotum 2.9; tegmina 19; hind femora 11.5.

Comparisons. The new species is slightly similar to *A. obscurus* and the other possible representatives of this subgenus in the simple structure of epiphallic distal part, but clearly distinguished by the semimembranous (not

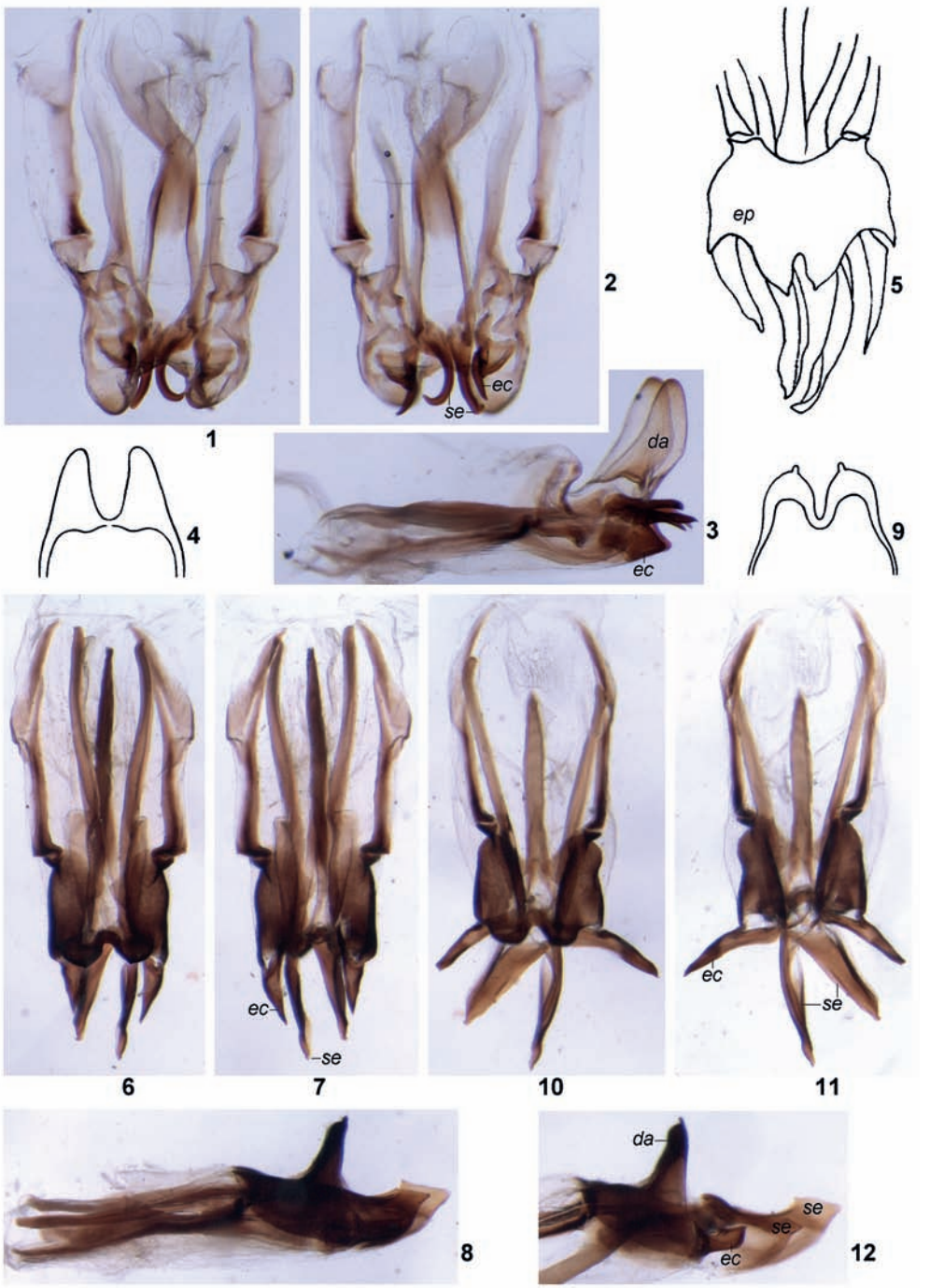

Fig. XIV (1–12). *Aphonomorphus*, male. **1–4**, *A deviatus* **sp. nov.**; **5–12**, *A. obscurus* (6–9, environs of Rio Aguarico; 10–12, environs of Rio Ucayali, ectoparameres in copulatory position). Genitalia from above (1, 6, 10), from below (2, 7, 11) and from side (3, 8); dorsoapical half of epiphallus from behind (4, 9); distal half of genitalia from above (5) and from side (12). [5, after Chopard (1956).] Abbreviations as in Fig. I (1–6).

completely sclerotised) dorsoapical lobes of epiphallus and much shorter and distinctly hooked second ectoparameres. Differences from all the other congeners with the known genitalia are given in the subgeneric key for the genus *Aphonomorphus*.

Aphonomorphus (*Neoaphonus?*) *obscurus* Chopard, 1956
(Fig. XIV: 5–12)

Material examined. Male; **Ecuador**, eastern plain, ~70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying primary forest, 10–17 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN. Male; **Peru**, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, 26–31 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Note. This species is rather widely distributed as it was described from Bolivia (Chopard, 1956). Colouration of this species is characteristic (very dark): in the male from Ecuador, upper half of head including antennae is blackish (but with the sparse whitish spots on the antennal flagellum), pronotum and most part of tegmina are also blackish (but with a few short yellowish stripes on the dorsal field along its lateral edge), hind legs are uniformly reddish brown, and rest of body is brown with some parts dark brown (coxae, fore and middle femora, and hind part of abdomen excepting cerci); in the male from Peru, colouration slightly lighter (head dorsum, antennal flagellum and pronotum are dark brown, but with the sparse whitish spots on the flagellum; legs and lower half of head including scapes are from reddish brown to almost reddish yellow; rest of body is brown, but with the several yellowish stripes on the dorsal tegminal field along its lateral edge and brownish grey cerci. There are also some differences between these specimens in the tegminal venation: the male from Ecuador is with the numerous longitudinal (slightly oblique) branches in the dorsal field, but the male from Peru has the almost completely cellular venation (without distinct longitudinal branches). However the other characters are almost identical in these specimens, and these characters are more or less similar to those of *A. ecuador* excepting rostral and genital ones (rostrum between antennal cavities slightly narrower than scape, and male genitalia as in Fig. XIV: 5–12).

Aphonomorphus (*Neoaphonus?*) *parobscurus* sp. nov.

Holotype. Female; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Female (holotype). General appearance very similar to that of *A. obscurus*, but colouration dark brown with light brown ocelli and lower half of head (excepting grayish brown palpi and numerous yellowish rings on antennal flagellum), brown general colour of legs and abdomen (excepting light brown cerci), somewhat darker and not very distinct numerous rather small spots on femora and tibiae, and blackish stripe on dorsal tegminal field (along its lateral edge) interrupted by several short yellowish longitudinal stripes. Other differences from *A. obscurus* following: median ocellus somewhat larger (areas between it and lateral ocelli narrow, almost twice narrower than median ocellus; in *A. obscurus*, these areas wider, almost as wide as median ocellus); venation of dorsal tegminal field with distinct oblique branches which somewhat S-shaped and less longitudinal than in *A. obscurus* (in latter species, these branches almost straight or practically indistinct); hind basitarsi slightly longer (inner dorsoapical spur of hind tibia clearly not reaching base of inner apical spur of hind basitarsus; in *A. obscurus*, it reaching this base); apical spurs of hind basitarsus shorter (inner of these spurs clearly not reaching apex of third segment of hind tarsus; in *A. obscurus*, it almost reaching this apex). Genital plate rather wide, roundly triangular, and with almost truncate apex; distal part of ovipositor similar to that of all other congeners.

Male unknown.

Length in mm. Body 19.5; body with wings 31; pronotum 3; tegmina 22; hind femora 13.5; ovipositor 14.

Comparisons. Differences from the most similar species (*A. obscurus*) are given above. From all the other congeners, the new species differs in the almost uniformly dark colouration in combination with the partly opened tympanum and rather narrow rostrum (slightly narrower than scape).

Genus ***Spiraphonus* gen. nov.**

Type species: *Spiraphonus spiralis* **sp. nov.**

Diagnosis. General appearance almost as in genus *Aphonomorphus* (especially in subgenera *Aphonomorphus* s. str. and *Lobaphonus*) including similar shape of head and its parts, presence of partly slit-like tympanum on only inner side of fore tibiae, as well as similar structure of wings, of male metanotal gland, and of anal and genital plates. Male genitalia unique (Fig. XV: 1–4, 10–14, 16): guiding rod completely undivided into a pair of second ectoparameres, long, distinctly twisted in distal half, and with more or less inflated apical or subapical part; ectoparameres (= first ectoparameres) usually semimembranous, strongly asymmetrical [right ectoparamere thick, lobe-like; left ectoparamere narrow and with apical hook (Fig. XV: 16) or with small tubercles on narrow apex (Fig. XV: 5, 7, 9, 15)].

Included species. The type species, *Aphonomorphus deceptor* Chopard, 1956 (Peru), *A. dissimilis* Chopard, 1956 (Bolivia), *S. asymmetricus* **sp. nov.**

Comparisons. The new genus differs from the other American genera of this subtribe (*Aphonomorphus* and *Eneopteroides*) in the more primitive structure of guiding rod in male genitalia (this rod is undivided into a pair of movable or partly movable processes). From the Indo-Malayan genus of Aphonomorphina (*Idiotrella*), the new genus differs in the presence of only inner tympanum and absence of stridulatory apparatus in male tegmina; guiding rod of two the latter genera is also specialised, but its specialization in these genera was different and independent.

***Spiraphonus spiralis* sp. nov.**
(Fig. XV: 1–6)

Holotype. Male; **Peru**, Ucayali Department, Atalaya Prov., ~35 km NWW of Atalaya Town on Rio Ucayali, environs of Sapani Vill., ~300 m, primary forest, 26–31 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Male (holotype). Colouration light brown with following marks: head dorsum behind ocelli grayish brown; lower part of epicranium with small slight darkish spots and stripes; ocelli and small area between lateral ocellus, antennal cavity, and eye yellowish with dark line along ventral edge of lateral ocellus and in median part of this small area; antennal flagellum with small and slight darkish spots; pronotal lobes and legs with numerous dark dots, two rows of small dark spots along dorsal and lateral surfaces of hind femora, and several blackish spots along ventral outer keel of these femora; tegminal venation brownish (slightly darker than light brown membranes); dorsal tegminal field with row of narrow blackish stripes along lateral edge; abdomen with brown dorsal part, somewhat darkened median part of seven proximal sternites, and small darkish spots and stripes on lateral part of tergites and sternites as well as on cerci. Size and external structure of body similar to that of *A. ecuador*, but ocelli and pronotum more similar to those of *A. distinctus*; genitalia (Fig. XV: 1–6) with partly semimembranous both epiphallus and left ectoparamere, with completely semimembranous right ectoparamere, with dorsoapical epiphallic lobes (spines) fused with each other and forming almost lamellar plate (this plate having moderately narrow, it to see from above, apical part divided into two short lobules by small median notch), with very long lateral ribbons of mold of spermatophore attachment plate and short apodeme of this plate, and with very long guiding rod having large and somewhat inflated distal part asymmetrically curved and partly sclerotised as in Fig. XV: 1–4, 6.

Female unknown.

Length in mm. Body 22; body with wings 32; pronotum 3.4; tegmina 23; hind femora 13.5.

Comparisons. The new species is most similar to *S. deceptor* (**new combination**), but distinguished by the epiphallus (from its base to the apex of dorsoapical lobes) slightly longer than the part of guiding rod exposed behind the apex of dorsoapical epiphallic lobes (in *S. deceptor*, epiphallus is distinctly shorter than this part of guiding rod; Fig. XV: 10), apical part of the latter lobes (fused with each other) clearly wider (for comparison see Fig. XV: 1, 10), apex of left ectoparamere not inflated (in *S. deceptor*, it is slightly inflated; see Fig. XV: 5, 9), distal part of guiding rod less strongly curved (Fig. XV: 1, 10), and mold of spermatophore attachment plate with much longer lateral ribbons and shorter apodeme (Fig. XV: 1, 10). From *S. dissimilis* (**new combination**) (Fig. XV: 16), the new species differs in the much larger and more strongly curved distal part of guiding rod as well as not hooked apex of left ectoparamere.

Spiraphonus spiralis junin subsp. nov.
(Fig. XV: 7, 8)

Holotype. Male; **Peru**, Junin Department, Satipo Prov., ~25 km SE of Satipo Town near Rio Venado Vill., ~1200 m, partly primary / partly secondary forest, 20–23 Oct. 2008; coll. A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva & V. Izersky; ZIN.

Description. Male (holotype). General appearance as in nominotypical subspecies, but labrum lighter (yellowish), dorsum of head darker (almost dark brown), dark line along ventral edge of lateral ocellus and between this ocellus and eye absent, and darkened dots and spots on lateral lobes of pronotum and on legs less distinct. Genitalia distinguished from those of *S. s. spiralis* by only two characters: left ectoparamere with distinctly longer row of small tubercles at apical part (for comparison see Fig. XV: 5, 7); distal part of guiding rod with clearly wider sclerotised part on dorsal (right) surface (see Fig. XV: 6, 8).

Female unknown.

Length in mm. Body 21; body with wings 31; pronotum 3.3; tegmina 23; hind femora 13.7.

Comparisons. The differences between two known subspecies of this species are listed above.

Spiraphonus asymmetricus sp. nov.
(Fig. XV: 11–15)

Holotype. Male; **Ecuador**, Morona Santiago Prov., bank of Rio Morona near border with Peru, environs of Puerto Morona Vill., ~300 m, primary forest, 5–15 Jan. 2010; coll. A. Gorochov; ZIN.

Paratypes. Male; same data as for holotype; ZIN. Male; **Ecuador**, eastern plain, ~70 km SE of Lago Agrio Town, environs of S. Pablo de Kantesiya Vill. on Rio Aguarico, lowlying primary forest, 10–17 Nov. 2005; coll. A. Gorochov & A. Ovtshinnikov; ZIN.

Description. Male (holotype). General appearance similar to that of *S. s. spiralis*, but head dorsum light brown with only small area behind ocelli (near them) brown, dark line along ventral edge of lateral ocellus and between this ocellus and eye absent, antennae almost uniformly yellowish, pronotum and legs almost completely light brown, eight abdominal sternite light, lateral parts of abdominal tergites and sternites almost uniformly light brown, cerci with less distinct small darkish marks. Genitalia (Fig. XV: 11–14) also similar to those of *S. spiralis*, but dorsoapical lobes of epiphallus with deeper notch between them, left ectoparamere with apical part as in Fig. XV: 15, guiding rod clearly shorter and with much smaller and less inflated distal part, mold of spermatophore attachment plate with distinctly shorter lateral ribbons and very long apodeme.

Variations. Paratype from environs of Rio Aguarico with completely brown dorsum of head behind ocelli and distinct darkish band on lateral tegminal field along its dorsal edge.

Female unknown.

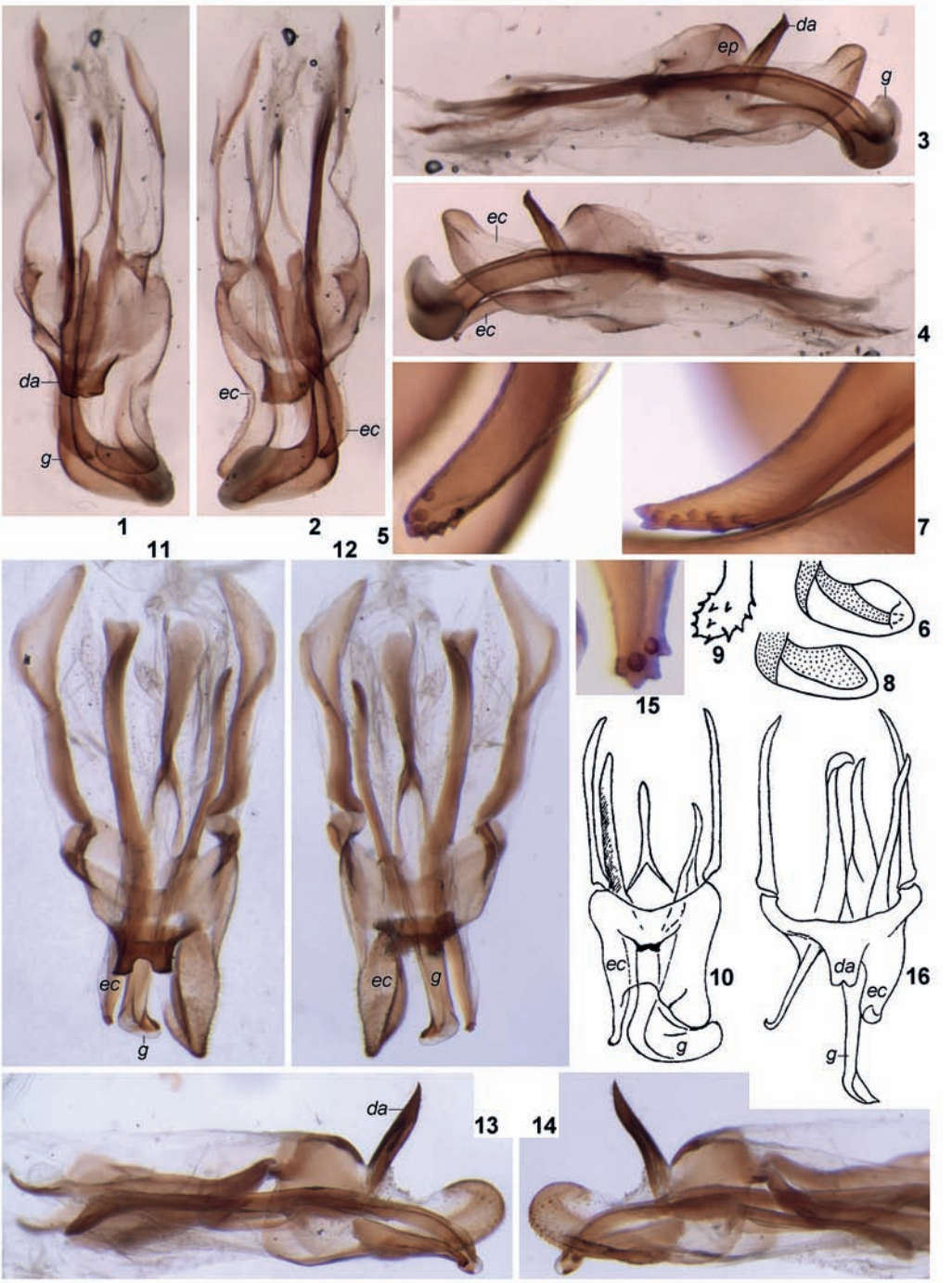

Fig. XV (1–16). *Spiraphonus* **gen. nov.**, male. **1–6**, *S. spiralis* **sp. nov.**; **7–8**, *S. spiralis junin* **subsp. nov.**; 9, 10, *S. deceptor*; 11–15, *S. asymmetricus* **sp. nov.**; 16, *S. dissimilis*. Genitalia from above (1, 10, 11, 16), from below (2, 12) and from side (3, 4, 13); distal part of left ectoparamere from below (5, 7, 9, 15) and of guiding rod from above (6, 8); genitalia without proximal part from side (14). [9, 10, 16, after Chopard (1956).] Abbreviations: *g*, guding rod; other abbreviations as in Fig. I (1–6).

Length in mm. Body 21–22; body with wings 31–33; pronotum 3.3–3.6; tegmina 2.2–2.4; hind femora 13–14.5.

Comparisons. Differences between the new species and *S. spiralis* are given above. From *S. deceptor*, the new species differs in the wider epiphallic dorsoapical lobes, smaller guiding rod (especially its distal part), not inflated apex of left ectoparamere, and longer apodeme of mold of spermatophore attachment plate, and from *S. dissimilis*, in the wider dorsoapical lobes of epiphallus, distinctly shorter guiding rod, less thin left ectoparamere, and not hooked apex of this ectoparamere.

Genus ***Aenigmaphonus* gen. nov.**

Type species: *Aenigmaphonus specialisatus* **sp. nov.**

Disagnosis. General appearance more or less similar to that of genera *Aphonomorphus* and *Spiraphonus* (including structure of head, pronotum, legs, wings, and abdominal apex), but body distinctly smaller, ocelli very small, and metanotal gland (Fig. XVI: 1) with hairs situated only on its narrow median area (which even narrower than in *Aphonomorphus peru*); fore tibiae with partly slit-like inner tympanum only. Male genitalia very characteristic (Fig. XVI: 2–5): epiphallus elongate, rather high, somewhat laterally compressed, and with two pairs of apical lobes (a pair of dorsoapical lobes and a pair of ventroapical ones; latter lobes possibly homologous to ectoparameres of other genera of Aphonomorphina); guiding rod probably fused with mold of spermatophore attachment plate, forming long and not wide semisclerotised structure gradually narrowing to more or less thin apical part and divided into a pair of very narrow and rather long ribbons at base; apodeme of this mold, endoparameres, and endoparameral apodemes undeveloped.

Included species. Type species only.

Comparisons. The new species seems related to the other genera of Aphonomorphina because the similar general structure of body. However it is remarkably distinguished from them by the very specialised male genitalia lacking articulated ectoparameres, endoparameres, and long apodemes, but having the guiding rod fused with the mold of spermatophore attachment plate. Subtribal position of the new genus is unclear.

***Aenigmaphonus specialisatus* sp. nov.**
(Fig. XVI: 1–5)

Holotype. Male; **Peru**, Loreto Department, bank of Rio Morona near its mouth and not far from Puerto America Town, ~200 m, partly primary / partly secondary forest, 20–23 Jan. 2010; coll. A. Gorochov; ZIN.

Description. Male (holotype). Colouration light brown with numerous slightly darker (grayish) dots on head dorsum and pronotum, small darkish spots on upper part of mouthparts (including palpi) and legs, additional rather dark (grayish brown) not very large area behind ocelli (near them) and a few spots along ventral outer keel of hind femora, almost yellowish membranes of lateral tegminal field, more or less darkened dorsum of abdomen (including anal plate) as well as pterothoracic and abdominal sternites, and slightly darkened both median line on ventral surface of genital plate and rather numerous small marks on cerci. Rostrum between antennal cavities almost equal to scape in width; area between median and lateral ocelli almost 2 times as wide as median ocellus and almost 1.5 times, as lateral ocellus. Pronotum with moderately angular hind part of disc; metanotal gland as in Fig. XVI: 1. Fore and middle legs somewhat shorter than in other genera of Aphonomorphina; articulated spines of hind tibiae normal for this subtribe; dorsoapical inner spur of hind tibia almost reaching base of apical inner spur of hind basitarsus; latter spur clearly not reaching apex of third segment of hind tarsus. Tegmina with more or less distinct oblique branches in dorsal field, but these branches somewhat S-shaped; majority of cells, formed by crossveins of this field, long and comparatively regular. Anal plate more or less triangular with rounded apex; genital

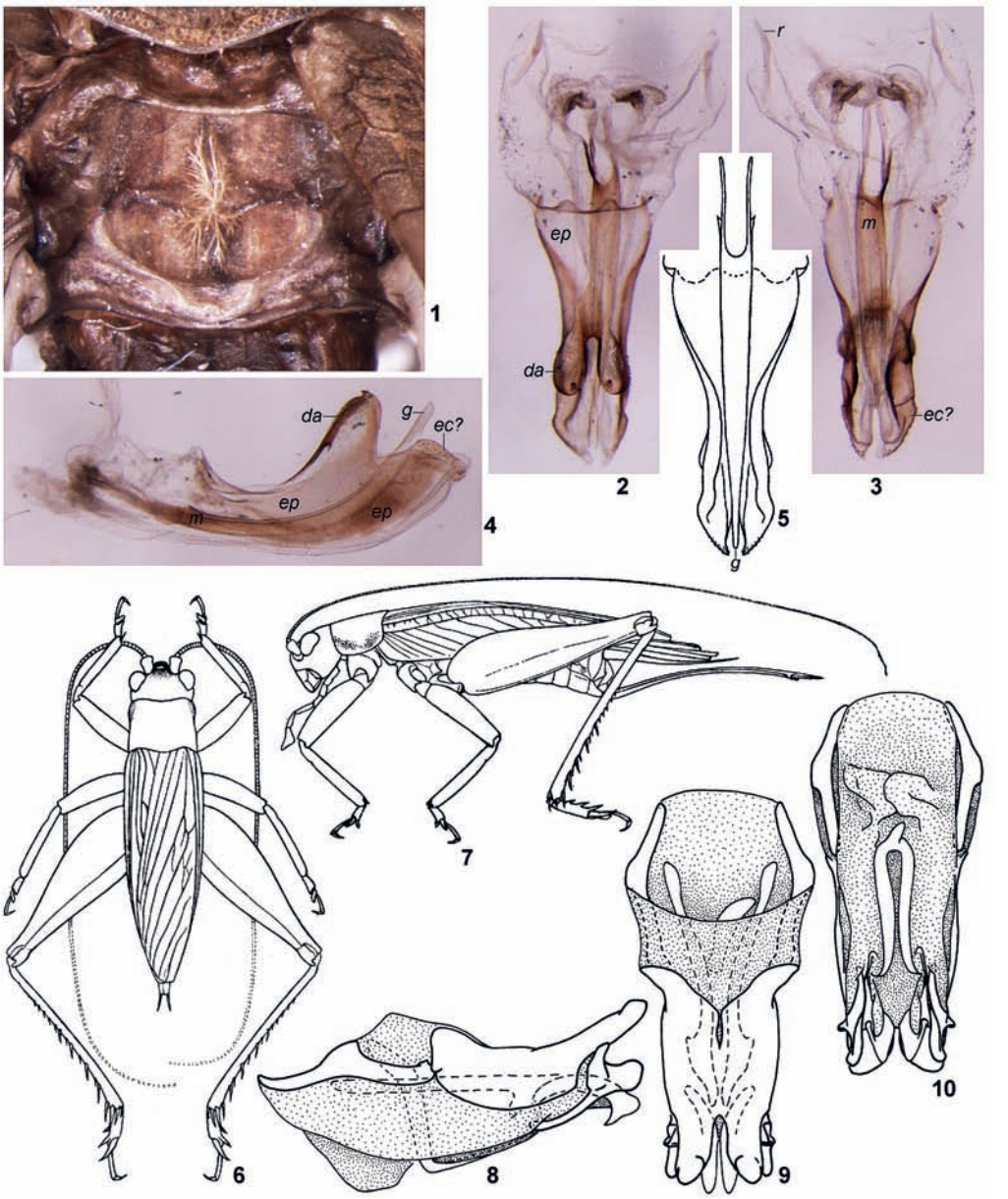

Fig. XVI (1–10). *Aenigmaphonus* **gen. nov.** and *Paraphonus*. **1–5**, *A. specialisatus* **sp. nov.**; **6–10**, *P. cophus* Hebard, 1928. Male metanotal gland from above (1); male genitalia from above (2, 9), from below (3, 10) and from side (4, 8); male genitalia without some proximal parts from below (5); body of male from above (6) and of female from side (7). [6, 7, after Hebard (1928); 8–10, after Desutter (1988).] Abbreviations as in Figs I (1–6) and XV (1–16).

plate elongate, gradually narrowing to rather narrow apical part which slightly curved upwards and with almost truncate apex; genitalia semimembranous (Fig. XVI: 2–5).

Female unknown.

Length in mm. Body 12.5; body with wings 23.5; pronotum 2.5; tegmina 16; hind femora 9.7.

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