

New and little known Landrevinae (Orthoptera: Gryllidae)

A.V. Gorochov

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2 new genera, 1 new subgenus, 11 new species, and 2 new subspecies are described. 1 generic name is reduced to subgeneric rank. 1 generic and 1 specific name is synonymized. Information about the scope of Landrevinae and composition of several genera is given.

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The paper is based on the collections of the Zoological Institute, Russian Academy of Sciences, St.Petersburg [ZIAS], Muzeum i Instytut Zoologii, Polska Akademia Nauk, Warszawa [MIZP], Natural History Museum, London [BMNH], and Division of Entomology and Zoology, Department of Agriculture, Bangkok [DEZB].

At present it is possible to include in this subfamily only the following genera: *Landreva* Walker, 1869 (= *Ectolandrevus* Saussure, 1877), *Endolandrevus* Saussure, 1877, *Paralandrevus* Saussure, 1877, *Duolandrevus* Kirby, 1906 (with 6 subgenera), *Mjobergella* Chopard, 1925, *Copholandrevus* Chopard, 1925, *Lasiogryllus* Chopard, 1930, *Dreulanvus* Chopard, 1930, *Apiotarsooides* Chopard, 1931, *Hemilandreva* Chopard, 1936, *Odonogryllodes* Chopard, 1969, *Vasilia* Gorochov, 1988, *Ahldreva* Otte, 1988, *Ajorama* Otte, 1988, *Avdrenia* Otte, 1988, *Eleva* Otte, 1988, *Fijina* Otte, 1988, *Sigeva* Otte, 1988, *Solepa* Otte, 1988, *Ginidra* Otte, 1988, *Jareta* Otte, 1988, *Kotama* Otte, 1988, *Papava* Otte, 1988, *Repapa* Otte, 1988, *Otteana* Gorochov, 1990, *Ectodreulanva* gen. n., and *Endodreulanva* gen. n. All other genera considered by the different authors as related to Landrevinae are in need of examination.

Genus *Duolandrevus* Kirby, 1906

This largest Indo-Malayan and Papuan genus consists of the following subgenera: (1) the nominotypical one, (2) *Eulandrevus* Gorochov, 1988 (= *Sutepia* Otte, 1988, syn. n.), (3) *Jorama* Otte, 1988 (= *Neova*

Otte, 1988), (4) *Bejorama* Otte, 1988, stat. n., (5) *Vietlandrevus* Gorochov, 1996, and (6) *Spinolandrevus* subgen. n.

Subgenus *Duolandrevus* Kirby

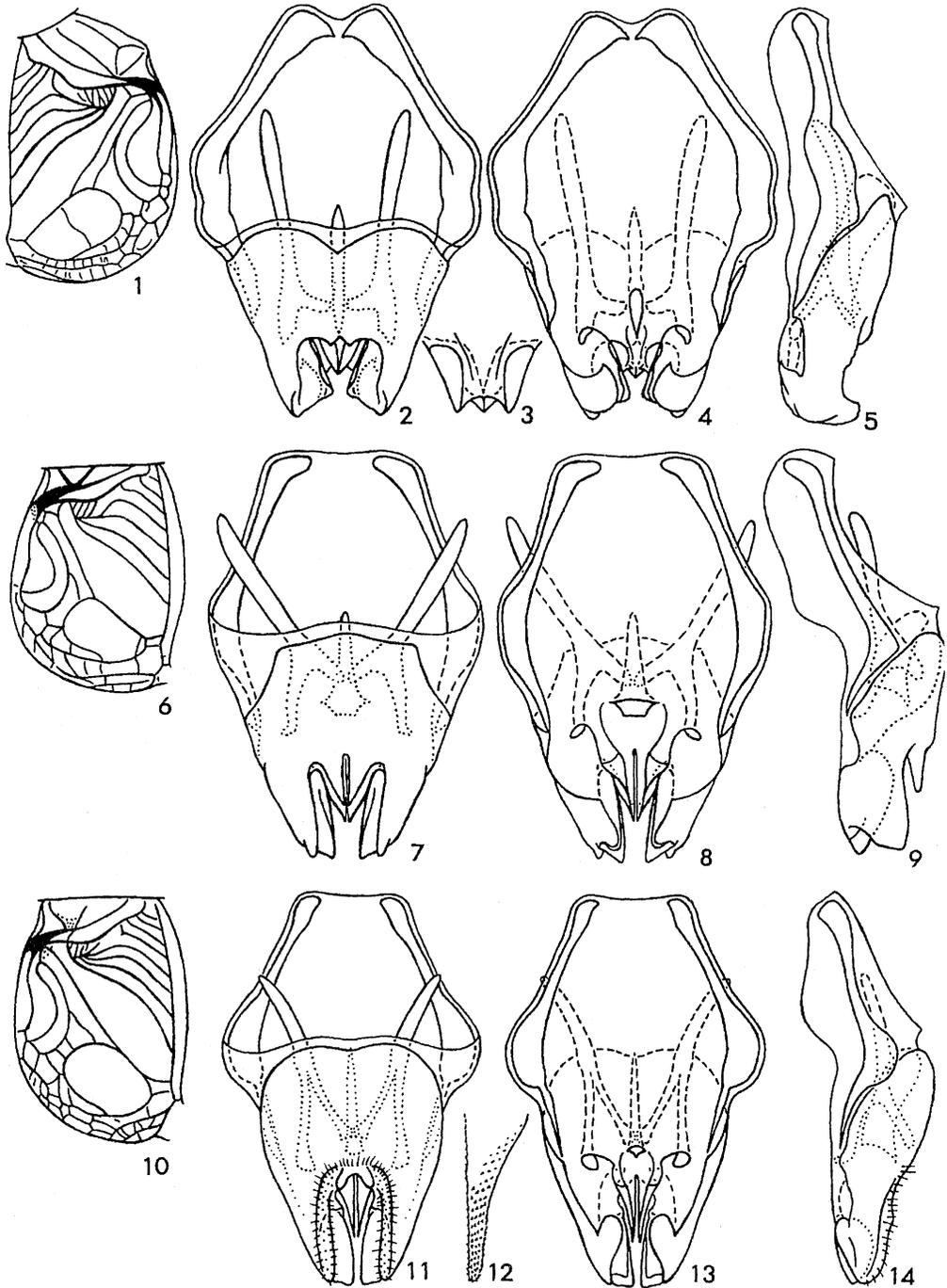
The subgenus includes several species from Sumatra, Malacca, Java, Lombok, and, possibly, from Komodo and Philippines: *Gryllus brachypterus* Haan, 1842 (type species), *D. karnyi* Otte, 1988, *D. (D.) fruhstorferi* Gorochov, 1996, *D. (D.) krabi* sp. n., *D. (D.) soekarandae* sp. n., *D. (D.) deliensis* sp. n., *D. (D.) mostovskyi* sp. n., and, possibly, *D. saltator* Bey-Bienko, 1966, *D. luzonensis* Otte, 1988, *D. balabacus* Otte, 1988, *D. gingoogus* Otte, 1988.

Duolandrevus (Duolandrevus) krabi sp. n. (Figs 1-5, 15, 16)

Holotype. ♂, Thailand, prov. Krabi (central Malacca), Ao Nang, hill near sea, secondary forest, 17-19.VII.1996 (A. Gorochov) (ZIAS).

Paratype. ♂, same data as holotype (ZIAS).

Description. Male (holotype). Medium-sized for this subgenus. Head rather dark brown with light yellowish ocelli, brown labrum and postclypeus, light brown scape (other parts of antennae rather dark) and palpi; rostrum between antennal cavities almost as wide as scape. Pronotum uniformly dark brown. Legs brown (almost light brown) with lightish (yellowish) areas of inner surface of hind femora (basal part and small spot near apex); both tympana oval, medium-sized (their sizes almost equal). Tegmina extending to apex of 5th abdominal



Figs 1-14. *Duolandrevus* (*Duolandrevus*), ♂. 1-5, *D. (D.) krabi* sp. n. (holotype); 6-9, *D. (D.) soekarandae* sp. n.; 10-14, *D. (D.) deliensis* sp. n. (holotype). Dorsal part of tegmen (1, 6, 10); genitalia from above (2, 7, 11), from below (4, 8, 13), and from side (5, 9, 14); guiding rod from below (3) and its lateral process from above (12).

tergite, with well developed mirror (Fig. 1); lateral part of tegmina with 7-8 almost straight and parallel longitudinal veins without branches; region of chords, basal and apical areas of dorsal part, upper half of lateral part brownish; other tegminal parts almost transparent. Hind wings and metanotal gland as in Fig. 15. Abdomen brown with light basal and dark apical parts of dorsum; anal plate slightly specialized, as in Fig. 16; genital plate simple, with slightly distinct angular apical projection; genitalia as in Figs 2-5.

Variation. Paratype slightly lighter, with rather lightish antennal flagellum.

Female unknown.

Length (mm). Body 18-19; pronotum 3-3.1; tegmina 7.5-7.8; hind femora 12-12.5; hind tibiae 7.8-8.2; hind metatarsi 3.2-3.3.

Comparison. This species is related to *D. brachypterus* (Haan), but differs from it and from other similar congeners in the apical part of hind lateral processes of epiphallus distinctly protruded upwards.

Duolandrevus (Duolandrevus) soekarandae sp. n.
(Figs 6-9, 19-21)

Holotype. ♂, Sumatra, "Soekaranda", H. Dohrn (MIZP).

Paratype. ♀, same data as holotype (MIZP).

Description. Male (holotype). Similar to *D. krabi*, but slightly lighter. Head brown with light brown labrum, postclypeus, antennae, palpi, and small spot on apex of rostrum. Pronotum uniformly brown. Legs almost light brown with very slight darkening on upper inner surface of apical part of hind femora; both tympana oval, medium-sized (inner tympanum slightly smaller than outer one). Tegmina extending to base of 5th abdominal tergite, with rather small distinct mirror (Fig. 6); tegminal dorsal part slightly brownish (almost transparent) with hardly darkened apical area, region of chords, and part of basal area near stridulatory vein; lateral part of tegmina with 6-7 slightly arched and almost parallel longitudinal veins without branches, brown with whitish stripe along lower edge. Hind wings and metanotal gland as in Fig. 19. Abdominal tergites brown; ventral part of body almost light brown; anal plate specialized, with transverse fold and distinctly darkened distal sclerite (this sclerite with median longitudinal concavity; its apex narrowly protruding and curved upwards) (Fig. 20); genital plate normal, with rather narrowly rounded apex; genitalia as in Figs 7-9.

Female. As male, but light spot on rostral apex more distinct; tegmina extending to base of 1st abdominal tergite, with oblique hind edge of dorsal part (Fig. 21), brown with narrow whitish stripe along lower edge of lateral part; lateral part of tegmina with 5 hardly arched and parallel longitudinal veins without branches; anal and genital plates as well as ovipositor typical of this genus.

Length (mm). Body: ♂ 18, ♀ 19; pronotum: ♂ 3, ♀ 3.3; tegmina: ♂ 7.5, ♀ 3.1; hind femora: ♂ 12, ♀ 13; hind tibiae: ♂ 8, ♀ 8.5; hind metatarsi: ♂ 3, ♀ 3.4; ovipositor 13.

Comparison. The new species is distinguished from other species of this subgenus by the much longer distal medial processes of epiphallus in male genitalia.

Duolandrevus (Duolandrevus) deliensis sp. n.
(Figs 10-14, 17, 18)

Holotype. ♂, Sumatra, "Deli" (MIZP).

Paratype. ♂, Sumatra, H. Dohrn (ZIAS).

Description. Male (holotype). As *D. soekarandae*, but rostrum of head with somewhat larger light brown spot on apex and lightish angular spot under previous spot, tegmina extending to base of 6th abdominal tergite and with hardly larger mirror (Fig. 10), hind wings and metanotal gland as in Fig. 17, anal plate less specialized: its apex rather widely rounded and hardly directed upwards (transverse fold and characteristic distal sclerite indistinct) (Fig. 18), genitalia with short distal medial processes of epiphallus and narrow paired distal sclerotizations of guiding rod (these sclerotizations with numerous small denticles) (Figs 11-14).

Variation. Head rostrum of paratype and frons under its apex almost uniformly brown.

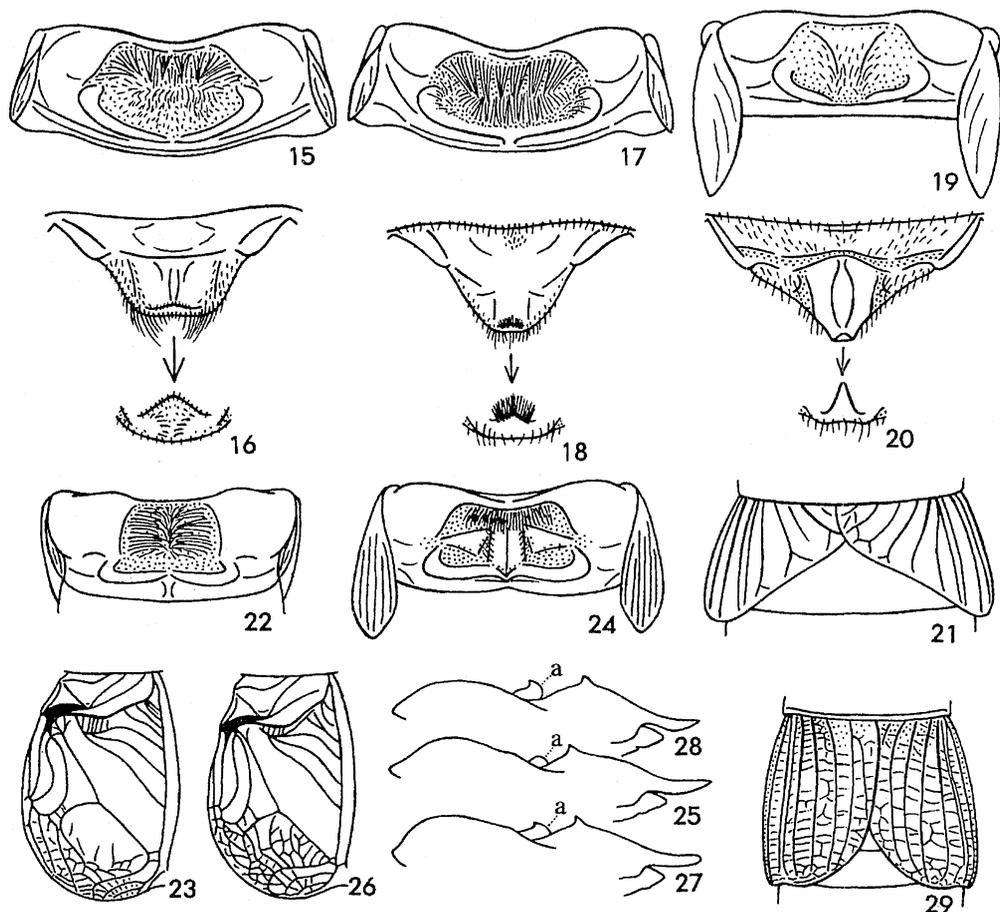
Female unknown.

Length (mm). Body 18-19.5; pronotum 2.8-2.9; tegmina 8.2-8.5; hind femora 11-12; hind tibiae 7.5-8; hind metatarsi 2.6-3.

Comparison. The distinctions from *D. soekarandae* are listed above. The new species differs from all other species of this subgenus in the characteristic guiding rod provided with narrow and finely denticulated paired distal sclerotizations.

Duolandrevus (Duolandrevus) mostovskyi sp. n.
(Figs 77-79)

Holotype. ♂, Thailand, prov. Surat Thani (central Malacca), 40 km WSW of Phanom, environs of National Park Khao Sok, primary forest, 20-29.VII. 1996 (A. Gorochov) (ZIAS).



Figs 15-29. *Duolandrevus*. 15, 16, *D. (Duolandrevus) krabi* sp. n. (holotype); 17, 18, *D. (D.) deliensis* sp. n. (holotype); 19-21, *D. (D.) soekarandae* sp. n.; 22, *D. (Eulandrevus) thailandicus* (Otte); 23-25, *D. (E.) rufus pahangensis* subsp. n. (24, 25, holotype); 26, 27, *D. (E.) rufus obscurus* subsp. n. (holotype); 28, *D. (E.) rufus rufus* Chop. (holotype from BMNH); 29, *D. (Spinolandrevus) dohrni* sp. n. Metanotal gland and hind wings of male from above (15, 17, 19, 22, 24); anal plate of male from above and its apex from behind (16, 18, 20); pterothorax of female from above (21, 29); dorsal part of male tegmen (23, 26); upper half of male genitalia from above (25, 27, 28).

Paratypes. 2 ♂, 1 ♀, same data as holotype (ZIAS).

Description. Male (holotype). Very similar to *D. krabi*, but slightly larger, head and pronotum reddish brown with very dark rostrum and lower half of head (except for more or less lighter labrum and post-clypeus), tegmina extending to middle part of 5th abdominal tergite, their mirror slightly more oval and more longitudinal, without any dividing veins, hind wings hardly longer than in *D. krabi* (metanotal gland practically identical to that of this species), apex of anal plate intermediate between those of *D. krabi* and *D. deliensis*, ge-

nitalia with very high epiphallus, wide and short its lateral processes, and reduced its medial processes (Figs 77-79).

Variation. Legs from light brown to almost reddish brown. Anal plate with rather dense or comparatively sparse apical setae.

Female. Similar to *D. soekarandae*, but coloration as in above-mentioned males (except for almost uniformly brown tegmina).

Length (mm). Body: ♂ 17-20, ♀ 18.5; pronotum: ♂ 3-3.2, ♀ 3.4; tegmina: ♂ 8.5-9, ♀ 2.7; hind femora: ♂ 12-12.8, ♀ 13; hind tibiae: ♂ 8-8.5, ♀ 8.6; hind metatarsi: ♂ 3-3.2, ♀ 3.2; ovipositor 12.

Comparison. *D. mostovskyi* differs from all other congeners in the high epiphallus with reduced medial processes.

Etymology. The species is named after Dr. M. Mostovsky for his help in organization of the field work in Malacca.

Subgenus **Eulandrevus** Gorochov, 1988

= *Sutepia* Otte, 1988, *syn. n.*

The generic name *Sutepia* was published on 19.XII.1988 (date on the cover of the issue). The name *Eulandrevus* was published (also as a generic name) not later than on 1.VII.1988 (official date of receipt of the book by the Library of Russian Academy of Sciences).

This subgenus includes species from Indo-China, Japan, China, and, possibly, from Palau Islands: *D. rufus* Chopard, 1931 (Figs 23-28), *E. sonorus* Gorochov, 1988 (type species of *Eulandrevus*), *E. dendrophilus* Gorochov, 1988 (= *D. hongkongae* Otte, 1988), *E. ivani* Gorochov, 1988, *E. guntheri* Gorochov, 1988 (= *D. ishigaki* Otte, 1988), *D. major* Otte, 1988, *S. thailandica* Otte, 1988 (type species of *Sutepia*) (Fig. 22), *E. enatus* Gorochov, 1990, *D. (E.) rarus* Gorochov, 1996, and, possibly, *Paralandrevus coriaceus* Shiraki, 1930, *D. yaeyamensis* Oshiro, 1988, *D. palauensis* Otte, 1988, *D. pendleburyi* Otte, 1988.

Duolandrevus (Eulandrevus) rufus pahangensis subsp. n.
(Figs 23-25)

Holotype. ♂, **Malaysia, Pahang** (southern Malacca), Kuala Tahan near river Tembeling, environs of National Park Taman Negara, primary forest, 12-16.VII.1996 (A. Gorochov) (ZIAS).

Paratypes. 6 ♂, 3 ♀, same data as holotype (ZIAS).

Description. Male (holotype). Very similar to *D. rufus rufus* from Perak, but lighter: head yellowish brown, pronotum reddish brown, legs yellowish brown with slightly darkened spot near apex of hind femora, basal and apical areas of tegminal dorsal part rather light brown, lateral tegminal part brown (not dark), abdomen light brown with darkish, rather narrow, longitudinal median stripe on dorsal surface. Mirror of tegmina comparatively large, oval, with few transverse veinlets in distal half only (Fig. 23). Hind medial processes of epiphallus rounded in profile (not hook-like) (Fig. 25: a).

Variation. Sometimes basal area of dorsal tegminal part slightly darker: brown or almost dark brown.

Female. Similar to male in general appearance. Tegmina uniformly reddish brown, extending to middle part or apex of 2nd abdominal tergite, with 7-8 almost parallel longitudinal veins of dorsal part more or less similar to those in Fig. 29. Ovipositor very long, much longer than hind femora.

Length (mm). Body: ♂ 20-22, ♀ 21-26; pronotum: ♂ 3.7-4, ♀ 4.2-4.6; tegmina: ♂ 9.8-11, ♀ 5.6-6; hind femora: ♂ 14.5-16, ♀ 16-17.5; hind tibiae: ♂ 10.5-12, ♀ 12-13; hind metatarsi: ♂ 3.5-3.7, ♀ 3.8-4; ovipositor 19-21.

Comparison. This new subspecies differs from the nominotypical one in the lighter coloration and rounded (in profile) hind medial processes of the epiphallus (these processes in *D. rufus rufus* are hook-like as in Fig. 28: a).

Duolandrevus (Eulandrevus) rufus obscurus subsp. n.
(Figs 26, 27)

Holotype. ♂, **Thailand, prov. Surat Thani** (central Malacca), 40 km WSW of Phanom, environs of National Park Khao Sok, primary forest, 20-29.VII.1996 (A. Gorochov) (ZIAS).

Paratype. ♂, same data as holotype (ZIAS).

Description. Male (holotype). Rather dark. Head brown with dark brown mandibles and rostrum between antennal cavities. Pronotum reddish brown with dark stripe along lower edge of lateral lobes. Legs reddish brown with light brown basal half of inner surface of hind femora and almost dark brown their distal part. Tegmina with almost black basal and brown apical areas of dorsal part, with dark brown lateral part, and with somewhat angular and not large mirror crossed by numerous transverse veinlets (Fig. 26). Coloration of abdomen as in *D. rufus pahangensis*, but with dark distal segments. Hind medial processes of epiphallus hook-like in profile (Fig. 27: a).

Variation. Pronotum and abdomen of paratype somewhat darker, but its tegmina with distinct, narrow, light brown stripe along distal edge of apical area.

Female unknown.

Length (mm). Body 21-23.5; pronotum 3.7-4; tegmina 9.8-10.2; hind femora 14.4-15; hind tibiae 9.6-10; hind metatarsi 3.4-3.6.

Comparison. The new subspecies differs from both other subspecies in the somewhat angular mirror with numerous transverse veinlets.

Subgenus **Bejorama** Otte, 1988, stat. n.

This taxon has been described originally as a genus (Otte, 1988). It is characterized by the rather small size, specialized male anal plate (Figs 43, 45), epiphallus with long setae on the upper surface of hind lateral processes, and very long hook-like ectoparameres fused with these processes (Figs 30-32). The subgenus includes 2 species only, both from southern Malacca: *D. intermedius* Chopard, 1969 (type species) and *D. (B.) firmus* sp. n.

Duolandrevus (Bejorama) firmus sp. n.
(Figs 30-33, 44, 45)

Holotype. ♂, **Malaysia**, *Pahang* (southern Malacca), Kuala Tahan near river Tembeling, environs of National Park Taman Negara, primary forest, 12-16.VII.1996 (A. Gorochov) (ZIAS).

Paratype. ♀, same data as holotype (ZIAS).

Description. Male (holotype). Rather small for this genus and large for this subgenus. Head and pronotum uniformly brown with scarcely distinct lightish ocelli and small spot at apex of rostrum, light brown labrum and median part of postclypeus; rostrum between antennal cavities almost as wide as width of scape. Legs light brown with darkened apical part of hind femora and dorsal surface of hind tibiae. Tegmina extending to apex of 5th abdominal tergite, with brown lateral part, basal and apical areas of dorsal part, and almost transparent all other areas; mirror indistinct (Fig. 33). Hind wings absent. Metanotal gland somewhat reduced (Fig. 44). Abdomen brown, rather dark, but with slightly lighter sternites and base of cerci; anal plate as in Fig. 45, with rather narrow distal part, rounded apex, deep longitudinal median concavity, and high, curved, keel-like lateral edges of this concavity at distal half of this plate; apex of anal plate with distinct bunch of rather long setae directed upwards; genitalia as in Figs 30-32, with only thin setae on dorsal surface of hind lateral processes of epiphallus.

Variation. In the paratype, general coloration of head and coloration of lateral part of tegmina slightly darker, almost dark brown.

Female unknown.

Length (mm). Body 18-20; pronotum 3.3-3.5; tegmina 7-7.4; hind femora 13-13.6; hind tibiae 8.8-9.1; hind metatarsi 3.4.

Comparison. The new species differs from *D. intermedius* in the larger size, somewhat reduced metanotal gland (for comparison

see Figs 42, 44), shorter and less curved hind lateral processes of epiphallus without any thickened setae on their dorsal surface.

Subgenus **Vietlandrevus** Gorochov, 1996

The subgenus consists of only vietnamese species: *Eulandrevus sapidus* Gorochov, 1990 (type species), *D. (V.) minimus* Gorochov, 1996, and *D. (V.) imitator* sp. n.

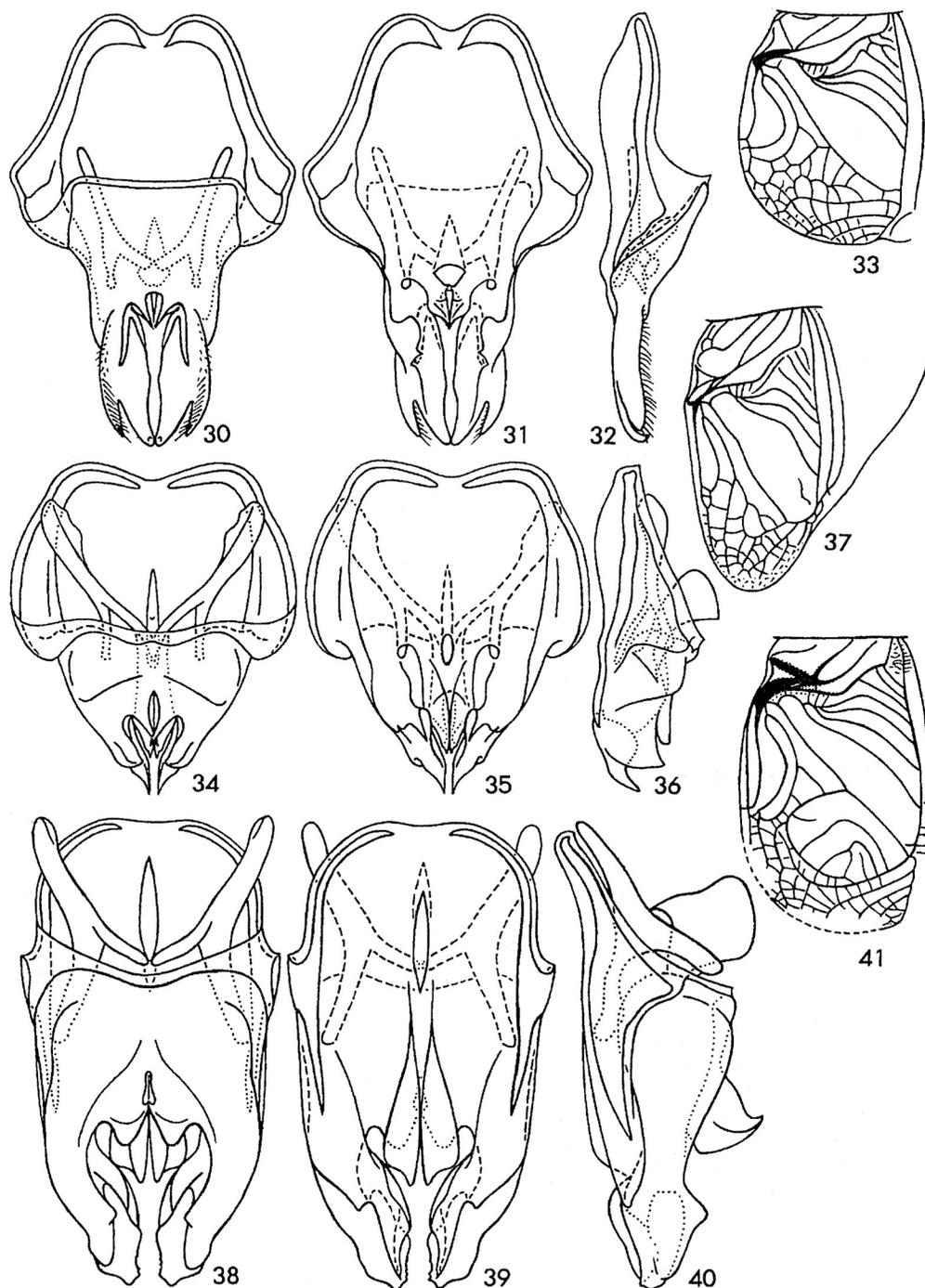
Duolandrevus (Vietlandrevus) imitator sp. n.
(Figs 34-37)

Holotype. ♂, **Vietnam**, *prov. Gia Lai*, distr. Ka Bang, Krong Pa, primary forest, IX.1997 (N. Orlov) (ZIAS).

Paratypes. 2 ♀, same data as holotype (ZIAS).

Description. Male (holotype). Similar to *D. sapidus* in size and general appearance. Head rather high and wide, brown with light brown large spots behind upper part of eyes, antennal cavities, and lateral ocellus, lower 2/3 of genae, large triangle between apex of rostrum and clypeal suture, scapes, and labrum, with yellowish palpi and postclypeus, and with reddish brown subgenae, anteclypeus, and mandibles. Pronotum hardly widening in front, with almost parallel lateral sides, brown with a light spot on fore part of lower half of lateral lobes. Legs light brown with slightly darker spot on inner surface of apical part of hind femora and median stripe on middle part of dorsal surface of hind tibiae; outer tympanum small, distinctly smaller than inner one. Tegmina as in Fig. 37, dark brown with slightly lighter (brownish) oblique veins, membranes between and around them, veins of apical area, and 3 longitudinal veins along lateral edge of dorsal part, with light chords, membranes between them, oblique inflation near plectrum, and stripe along lower edge of lateral part. Abdomen brown with dark brown dorsal longitudinal median stripe, last tergite, anal and genital plates, and with light brown cerci; anal plate simple, with wide truncated apex; genitalia as in Figs 34-36.

Female. Similar to male in coloration and shape of body, but without distinct darkenings on hind tibiae and abdomen. Tegmina extending to base of first abdominal tergite, almost round, dark brown with light basal part, longitudinal stripe along lateral edge of dorsal part, and lower 1/3 of lateral part. Ovipositor very long, much longer than hind femora.



Figs 30-41. *Duolandrevus*, ♂. 30-33, *D. (Bejorama) firmus* sp. n. (33, holotype); 34-37, *D. (Vietlandrevus) imitator* sp. n.; 38-41, *D. (Spinolandrevus) dohrni* sp. n. Genitalia from above (30, 34, 38), from below (31, 35, 39), and from side (32, 36, 40); dorsal part of tegmen (33, 37, 41).

Length (mm). Body: ♂ 27, ♀ 23-27; pronotum: ♂ 4.2, ♀ 4.3-4.5; tegmina: ♂ 8.7, ♀ 4-4.3; hind femora: ♂ 16.3, ♀ 17.5-18; hind tibiae: ♂ 10, ♀ 11-11.5; hind metatarsi: ♂ 4.2, ♀ 4.3-4.5; ovipositor 21-22.

Comparison. This species is distinguished from *D.apidus* by the wide upper lobe of hind lateral process and narrow hind medial processes of epiphallus, from *D.minimus* by the large size and high male genitalia with almost acute upper lobe of the hind lateral process of epiphallus.

Subgenus *Spinolandrevus* subgen. n.

Type species *Duolandrevus (Spinolandrevus) dohrni* sp. n.

Diagnosis. This subgenus differs from other subgenera in the characteristic shape of head (rather high, not widened, and with almost rounded area of rostrum in profile), and long all spines (articulated and fused) of tibiae and metatarsi of hind legs. It is also distinguished from subgenera *Duolandrevus* and *Bejorama* by the large size of body, from *Vietlandrevus* by the not reduced distal part of lateral area of male tegmina, and from *Jorama* by the absence of very small denticles at hind lateral processes of epiphallus.

Included species. Type species and *D. (E.) sumatranus* Gorochov, 1996.

Duolandrevus (Spinolandrevus) dohrni sp. n. (Figs 29, 38-41, 46)

Holotype. ♂, Sumatra, "Soekaranda", H. Dohrn (MIZP).

Paratype. ♀, same data as holotype (MIZP).

Description. Male (holotype). Head with slight vertical keel along both frontogenal sutures and small rugose spot under both antennal cavities, brown with light brown genae, subgenae, mouthparts, palpi, antennae (only lateral and medial surfaces of scape slightly darkish), 2 small spots on rostrum (at its apex and between apex and median ocellus), and greyish triangular spot under rostrum. Pronotum rather long and hardly narrowing in front, brown with light brown spot along fore half of lower edge of lateral lobes and dense, whitish yellow pubescence. Legs brown, rather light, but with slightly darkened femora; both tympana almost round, rather small (inner tympanum hardly larger than outer one); hind femora with distinct, numerous, narrow, oblique stripes consisting of thin hairs; hind tibiae with 4 pairs of articulated spines, 3 outer

and 2 inner proximal spines fused with tibia; hind metatarsi with 3 pairs of spines and long spurs. Tegmina extending to base of 7th abdominal tergite, with large mirror and comparatively long apical area (Fig. 41); dorsal part transparent with brownish basal and apical areas, distal part of mirror (looking as a band along distal edge of mirror), and large spots in regions of chords and oblique veins; lateral part with 7-8 almost straight longitudinal veins without branches and traces of transverse veinlets between them, brown (rather dark) with transparent band along lower edge. Metanotal gland and hind wings as in Fig. 46. Ventral part of body and abdominal tergites light brown, but abdomen with longitudinal median dark stripe above; anal plate destroyed; genital plate large and with narrowly rounded apex, slightly darkened in distal part; genitalia as in Figs 38-40.

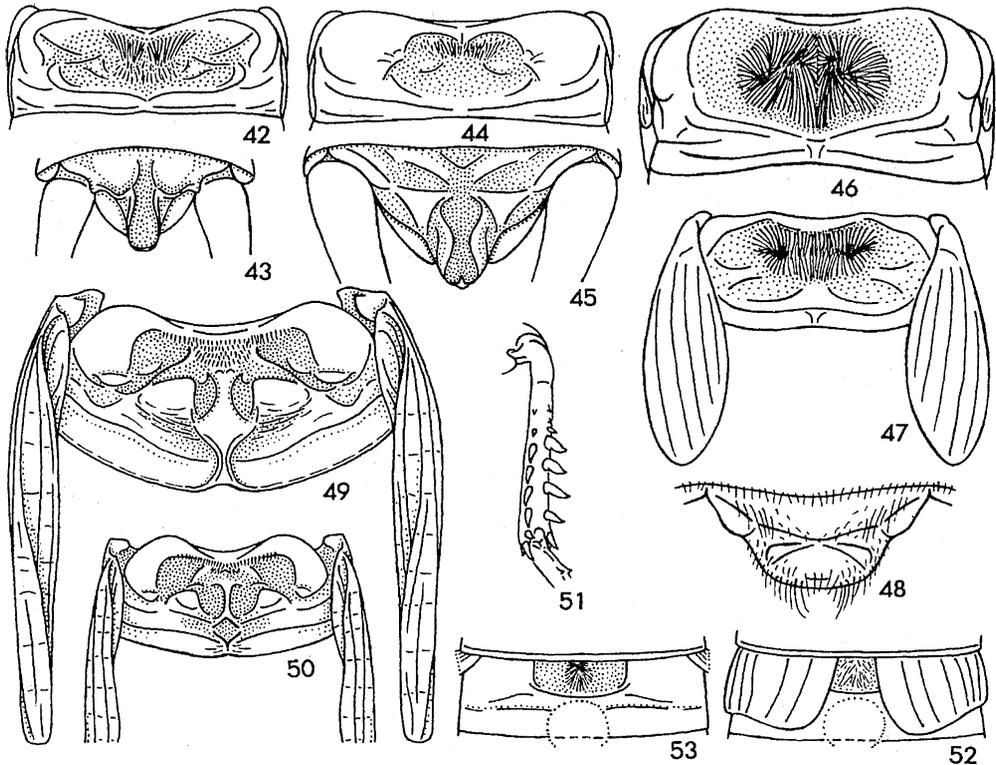
Female. Similar to male, but with hardly darker pronotum, distal part of hind femora, and almost dark brown anal plate. Tegmina extending to base of 3rd abdominal tergite; their dorsal part as in Fig. 29; tegminal lateral part with 5-6 longitudinal veins without branches; tegmina light brown with brown veins, 2 large (proximal and distal) spots on dorsal part, and lateral part excepting light band along its lower edge. Ovipositor hardly longer than hind femora, with rather simple, narrow, acute apex.

Length (mm). Body: ♂ 31, ♀ 27; pronotum: ♂ 4.5, ♀ 4.7; tegmina: ♂ 12, ♀ 7; hind femora: ♂ 18, ♀ 19; hind tibiae: ♂ 12, ♀ 12; hind metatarsi: ♂ 4.5, ♀ 5; ovipositor 20.

Comparison. This species is very similar to *D. sumatranus*, but its coloration is lighter, the area of male metanotal gland covered with long setae larger, epiphallus slightly narrower and with distinctly wider apical part of hind medial processes in profile, medial sclerotizations near the apices of hind lateral processes of epiphallus denticulated, and the apodeme of mould of the spermatophore attachment plate distinctly shorter.

Genus *Repapa* Otte, 1988

This genus is closely related to *Duolandrevus* (maybe it is only a subgenus of the latter). *Repapa* differs from all other subgenera of *Duolandrevus* in a single character: the presence of large unpaired hind median process of epiphallus in male genitalia (Fig. 54). The genus includes 4 species from Ka-



Figs 42-53. *Duolandrevus*, *Repapa*, *Ectodrelanva*, and *Odontogrylodes*, ♂. 42, 43, *D. (Bejorama) intermedius* Chop.; 44, 45, *D. (B.) firmus* sp. n.; 46, *D. (Spinolandrevus) dohrni* sp. n.; 47, 48, *R. sulawesi* sp. n.; 49, *E. marginalis* sp. n. (holotype); 50, *E. paramarginalis* sp. n.; 51-53, *O. stenus* sp. n. Metanotal gland and hind wings (when they are developed) from above (42, 44, 46, 47, 49); same structures, but wings without distal part (50); abdominal apex (43, 45) and anal plate (48) from above; hind tibia from above and slightly from side (51); pterothorax (52) and pterothorax with tegmina removed (53) from above.

limantan, the Philippines, and Sulawesi: *Duolandrevus brevipes* Chopard, 1937, *R. sapagaya* Otte, 1988 (type species), *R. tenompokae* Otte, 1988, and *R. sulawesi* sp. n.

***Repapa sulawesi* sp. n.**
(Figs 47, 48, 54-58)

Holotype. ♂, Sulawesi, "S. Celebes, Bua-Kraeng, 5000'", II. 1896 (H. Fruhstorfer) (MIZP).

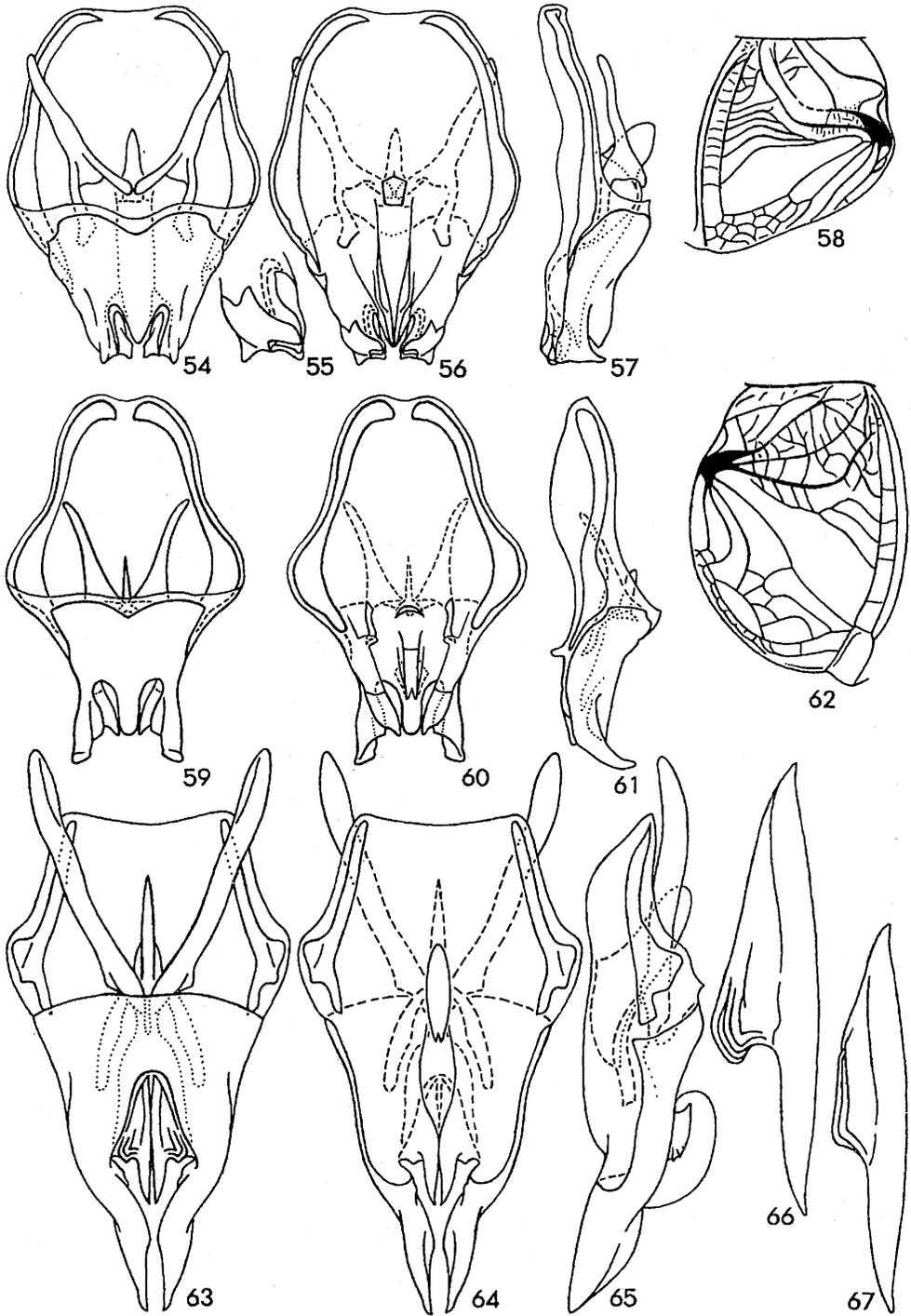
Description. Male (holotype). Head slightly wider than pronotum, brown with light ocelli (lateral ocelli larger than median one) and postclypeus, more or less dark brown rostrum and frons under antennal cavities, subgenae, and genae under eyes (these areas of genae with slight wrinkles and short, almost keel-like frontogenal sutures), and several slight longitudinal lines on vertex, light brown antennae and palpi. Pronotum rather short, uniformly brown.

Legs light brown; inner tympanum medium-sized and oval, but outer one rather small and elongated. Tegmina extending to apex of 3rd abdominal tergite, without mirror, with oblique distal edge (Fig. 58), brownish with almost transparent dorsal part and transparent stripe along lower edge of lateral part; tegminal lateral part with 5 slightly curved longitudinal veins without branches. Metanotal gland and hind wings as in Fig. 47. Abdomen brown with slightly lighter sternites, genital plate, and cerci; anal plate simple, as in Fig. 48; genitalia as in Figs 54-57.

Female unknown.

Length (mm). Body 17; pronotum 2; tegmina 4.8; hind femora 10.5; hind tibiae 6.8; hind metatarsi 3.

Comparison. This species differs from all other congeners in the shortened diagonal vein, almost straight chords, and strongly



Figs 54-67. *Repapa* and *Ectodreelanva*, ♂. 54-58, *R. sulawesi* sp. n.; 59-61, *R. brevipes* (Chop.) (holotype); 62-66, *E. marginalis* sp. n. (holotype); 67, *E. paramarginalis* sp. n. Genitalia from above (54, 59, 63), from below (56, 60, 64), and from side (57, 61, 65); right hind lateral process of epiphallus from below (55); dorsal part of tegmen (58, 62); right lobe of guiding rod of genitalia from above (66, 67).

oblique distal edge in the male tegmina, wide base of hind median process of epiphallus, characteristic shape of its hind lateral processes and sclerotizations nearest to these processes (for comparison see Figs 54-57, 59-61).

Genus *Jareta* Otte, 1988

This genus includes one species: *Jareta insignis* (Walker, 1869), **comb. n.** (= *Landreva insignis* = *J. sedlaceki* Otte, 1988, **syn. n.**). Otte (1988) gives two variants of decoding of the geographic label for his species: "Perai [= Erai] of Indonesia" or "Perak of Malaya". But it is possible that the type locality of this species is Sri Lanka as Walker's species described from "Ceylon" (Walker, 1869) is identical with Otte's description in the external morphology and characteristics of the male genitalia. The holotype of *J. insignis* from BMNH was examined by me.

Genus *Ectodrelnva* gen. n.

Type species *Ectodrelnva marginalis* sp. n.

Diagnosis. This genus can be distinguished from all other genera of the subfamily by the rather small and high head, presence of only outer tympanum, distinctly shortened tegmina in both sexes, well developed male tegminal stridulatory apparatus (Fig. 62), large metanotal gland with a pair of characteristic medial lobules in male (Figs 49, 50), not strongly shortened hind wings, and the following peculiarities of the male genitalia: epiphallus without hind median process (or paired hind medial processes), guiding rod with paired, large, lamellar, arched lobes (apex of these lobes directed dorsally and slightly proximally) (Figs 63-65).

Included species. Type species and *E. paramarginalis* sp. n.

Ectodrelnva marginalis sp. n.

(Figs 49, 62-66)

Holotype. ♂, Thailand, prov. Phetchaburi, 50 km SW of Phetchaburi, environs of National Park Kaeng Krachan, 400 m, secondary forest, 30.VII-1.VIII.1996 (A. Gorochov) (ZIAS).

Paratypes. 6 ♂, 6 ♀, same data as holotype, but 30.VII-6.VIII.1996 (A. Gorochov) (ZIAS); 1 ♀, "Thailand, lot 1648", 14-27.IV.1953 (DEZB).

Description. Male (holotype). Size comparatively large. Head very dark brown (almost black) with hardly lighter (brown) hind part of vertex, small spot before median

ocellus, palpi, and antennae, whitish ocelli and membrane of antennal cavities; rostrum between antennal cavities distinctly narrower than width of scape. Pronotum hardly narrowing in front, very dark brown (almost black). Legs brown with dark brown apical part of hind femora and slight, light brown spot on inner surface of these femora before dark apical part; outer tympanum rather long. Tegmina with dorsal part as in Fig. 62; their dorsal part transparent with brownish basal and apical areas, mirror, and area between diagonal vein and chords; tegminal lateral part rather dark brown with light stripe along lower edge. Metanotal gland and hind wings as in Fig. 49. Abdomen dark brown with brown sternites and lightish base of cerci; anal plate simple, with rounded apex; genitalia as in Figs 63-65; their guiding rod with 5 sharp parallel ribs at middle part of both external surfaces (Fig. 66).

Variation. Sometimes pronotum with brown spot on middle part of disc, legs slightly lighter, abdominal tergites blackish, abdominal sternites light brown, genitalia with somewhat shorter endoparameral apodeme, and their guiding rod with 6 ribs.

Female. Similar to male, but pronotum with parallel lateral sides. Tegmina extending to middle part of first abdominal tergite, with oblique distal edge of dorsal part, rather dark brown with 2 narrow light stripes: along lower edge of lateral part and along lateral edge of dorsal part. Ovipositor with narrow acute apex, much shorter than cerci.

Length (mm). Body: ♂ 20-25, ♀ 19-23; pronotum: ♂ 3.5-4, ♀ 3.7-4.2; tegmina: ♂ 7.5-8.5, ♀ 3.5-4; hind femora: ♂ 14.5-16.5, ♀ 15-17; hind tibiae: ♂ 11.5-13, ♀ 12-13.5; hind metatarsi: ♂ 4-4.5, ♀ 4.2-4.7; ovipositor 12.5-14.

Comparison. The differences between this species and the second species of *Ectodrelnva* are listed below (see description of *E. paramarginalis* sp.n.).

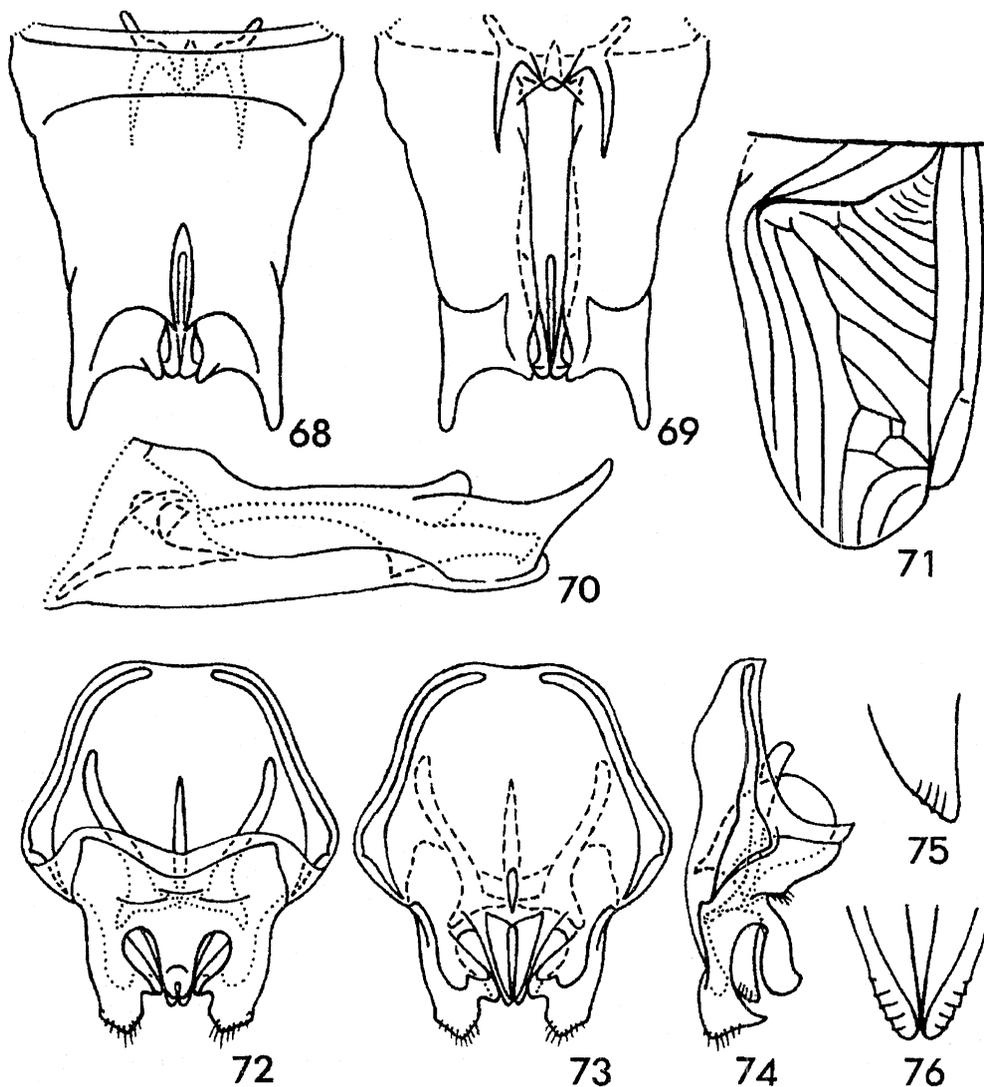
Ectodrelnva paramarginalis sp. n.

(Figs 50, 67)

Holotype. ♂, Cambodia, prov. Rattanakiri, environs of Banlung, secondary forest, 1-2.III.1998 (imago reared 22-31.VII.1998) (A. Gorochov) (ZIAS).

Paratype. 1 nymph, same data as holotype (ZIAS).

Description. Male (holotype). Very similar to *E. marginalis*, but distinctly smaller, head slightly depressed dorso-ventrally and practically uniformly dark brown, metanotal



Figs 68-76. *Endodreelanva* and *Odontogrylloides*, ♂. 68-71, *E. tomentosa* (Chop.) (holotype from BMNH); 72-76, *O. stemus* sp. n. Genitalia from above (68, 72), from below (69, 73), and from side (70, 74); dorsal part of tegmen (71); distal part of guiding rod from side (75) and from below (76).

gland with relatively wider distance between medial lobules, narrower median keel-like convexity between them, and slight rhombic concavity behind this convexity (Fig. 50), guiding rod of genitalia with 3 sharp parallel ribs at middle part of both external surfaces, these ribs longer and with distinctly more sloping distal part (Fig. 67).

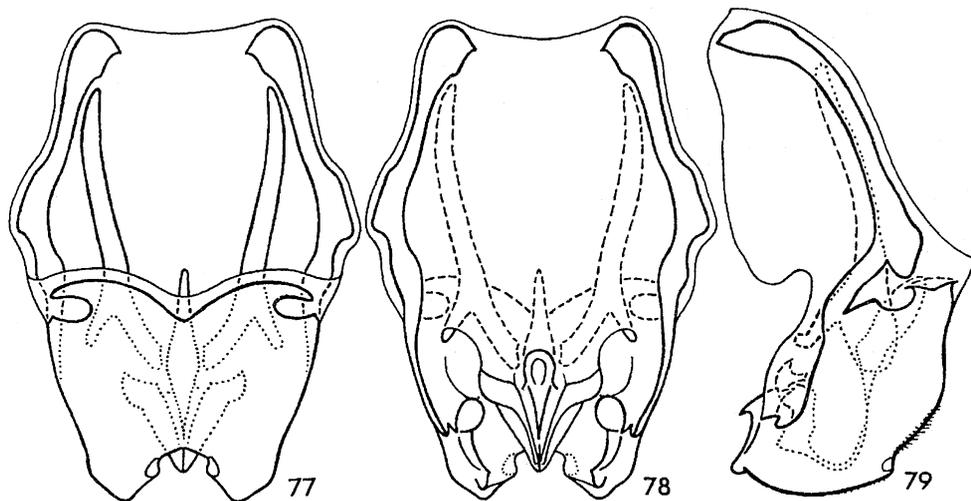
Female unknown.

Length (mm). Body 16.5; pronotum 2.7; tegmina 6; hind femora 10; hind tibiae 7.5; hind metatarsi 2.5.

Genus *Endodreelanva* gen. n.

Type species *Endolandrevus tomentosus* Chopard, 1931 (Malacca).

Diagnosis. The new genus is more or less similar to *Endolandrevus* in the presence of



Figs 77-79. *Duolandrevus (Duolandrevus) mostovskyi* sp. n. (holotype); male genitalia from above (77), from below (78), and from side (79).

only inner tympanum of fore tibiae, but differs from it and from all other genera of Landrevinae in the partly reduced male tegminal stridulatory apparatus (Fig. 71) and very characteristic male genitalia: epiphallus very long, with deep and narrow hind median notch, with narrow spine-like hind lateral processes, and with 2 pairs (shorter upper and longer lower) of hind medial processes; endoparameres small, with very short apodemes, and without median sclerotized connection; guiding rod very long and with deeply bifurcated distal part; mould of spermatophore attachment plate with short apodeme (Figs 68-70).

◦ *Included species.* Only the type species.

Genus *Odontogrylloides* Chopard, 1969

This genus is similar in general appearance to *Ahldreva* from New Guinea, but they are only ecological analogues as their genitalia are very different: the genitalia of *Odontogrylloides* are more similar to those of *Duolandrevus* and related genera than to those of *Ahldreva* (Figs 72-76) (for comparison see also Gorochov, 1996: Figs 81-83). The genus includes 2 or 3 species from Sumatra, Java, and, possibly, Singapore: *O. brevicauda* Chopard, 1969, *O. stemus* sp. n., and, possibly, *O. latus* Chopard, 1969.

***Odontogrylloides stemus* sp. n.**
(Figs 51-53, 72-76)

Holotype. ♂, Java, "Java Fr." (MIZP).

Description. Male (holotype). Body almost cylindrical. Head rather narrow and high (its shape in profile approximately similar to that in *D. dohrni*), but mouthparts not lengthened; ocelli practically indistinct; rostrum between antennal cavities slightly narrower than scape; palpi rather short; head almost uniformly dark brown, but labrum and postclypeus hardly lighter, lower hind part of genae with lightish spot, antennae and palpi light brown. Pronotum rather long (only slightly shorter than its maximal width), hardly narrowing in front; lower edge of pronotal lateral lobes roundly oblique; coloration of pronotum dark brown with more or less lighter lateral lobes and hind part of disc. Tegmina strongly shortened, extending almost to apex of metanotum, with only parallel longitudinal veins without branches (Fig. 52); lateral tegminal part with 5 veins; coloration of tegmina almost uniformly light brown. Hind wings absent. Metanotal gland as in Fig. 53. Legs not long, uniformly light brown, but with slightly darkened distal and upper parts of hind femora; fore tibiae without typana; hind tibiae with rather short spines (inner spines very thick, glandular) (Fig. 51). Abdomen with blackish tergites and brownish sternites (but pterothorax almost light brown); anal plate simple, blackish; genital plate rather short, narrowly rounded at apex, also blackish; cerci light brown; genitalia as in Figs 72-74, with characteristic, short, sharp, parallel ribs at both external parts of guiding rod (Figs 75, 76).

Female unknown.

Length (mm). Body 13.5; pronotum 3; tegmina 1.1; hind femora 8.7; hind tibiae 4.5; hind metatarsi 2.2.

Comparison. The new species is very similar to *O. brevicauda*, but differs in the darker coloration, shorter male tegmina, and strongly narrowing base of hind median process of epiphallus in profile (Fig. 74). *O. stenus* can be distinguished from *O. latus* by the more slender and dark body as well as the distinctly shorter hind tibiae.

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References

- Gorochov, A.V. 1988. New and little known crickets of the subfamilies Landrevinae and Podoscirtinae (Orthoptera, Gryllidae) from Vietnam and some other territories. In: *Fauna i ekologiya nasekomykh Vietnama* [Fauna and ecology of Vietnam insects]: 5-21. Moscow. (In Russian).
- Gorochov, A.V. 1996. New and little known crickets from the collection of the Humboldt University and some other collections (Orthoptera: Grylloidea). Part 2. *Zoosyst. ross.*, 5(1): 29-90.
- Otte, D. 1988. Bark crickets of the Western Pacific region (Gryllidae: Pteroplistinae). *Proc. Acad. Nat. Sci. Philadelphia*, 140(2): 281-334.
- Walker, F. 1869. *Catalogue of the specimens of Dermaptera Saltatoria and supplement to the Blattariae in the collection of the British Museum*. 224 p. London.

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