Russian Entomol. J. 7 (1–2): 1–14

New and little known katydids of the genera *Stictophaula*, *Arnobia*, and *Mirollia* (Orthoptera: Tettigoniidae: Phaneropterinae) from South-East Asia

Новые и малоизвестные кузнечики родов *Stictophaula*, *Arnobia* и *Mirollia* (Orthoptera: Tettigoniidae: Phaneropterinae) из Юго-Восточной Азии

A.V. Gorochov
А.В. Горохов

Zoological Institute, Russian Academy of Sciences, St.Petersburg 199034, Russia.
Зоологический институт Российской Академии Наук, С.-Петербург 199034, Россия.

KEY WORDS: taxonomy, new taxa, redescriptions, Orthoptera, Phaneropterinae, South-East Asia.
КЛЮЧЕВЫЕ СЛОВА: систематика, новые таксоны, переописания, Orthoptera, Phaneropterinae, Юго-Восточная Азия.

ABSTRACT: 15 new species and 1 new subspecies of the genera *Stictophaula* Heb., *Arnobia* Stål, and *Mirollia* Stål are described. Some other insufficiently studied species of these genera are briefly redescribed. All species included in the genera *Stictophaula* and *Arnobia* are listed.

РЕЗЮМЕ: Описаны 15 новых видов и 1 новый подвид родов *Stictophaula* Heb., *Arnobia* Stål и *Mirollia* Stål. Кратко переописаны некоторые другие недостаточно изученные виды этих родов. Приводится видовой состав *Stictophaula* и *Arnobia*.

This paper is based on the material from the following collections: Zoological Institute, Russian Academy of Sciences, St.Petersburg (ZIAS), Muzeum i Institut Zoologii, Polska Akademia Nauk, Warszawa (MIZP), and Institute of Entomology, Academia Sinica, Beijing (IEAS).

Genus *Stictophaula* Hebard, 1923

Type species *Stictophaula bakeri* Hebard, 1923 (Singapore).

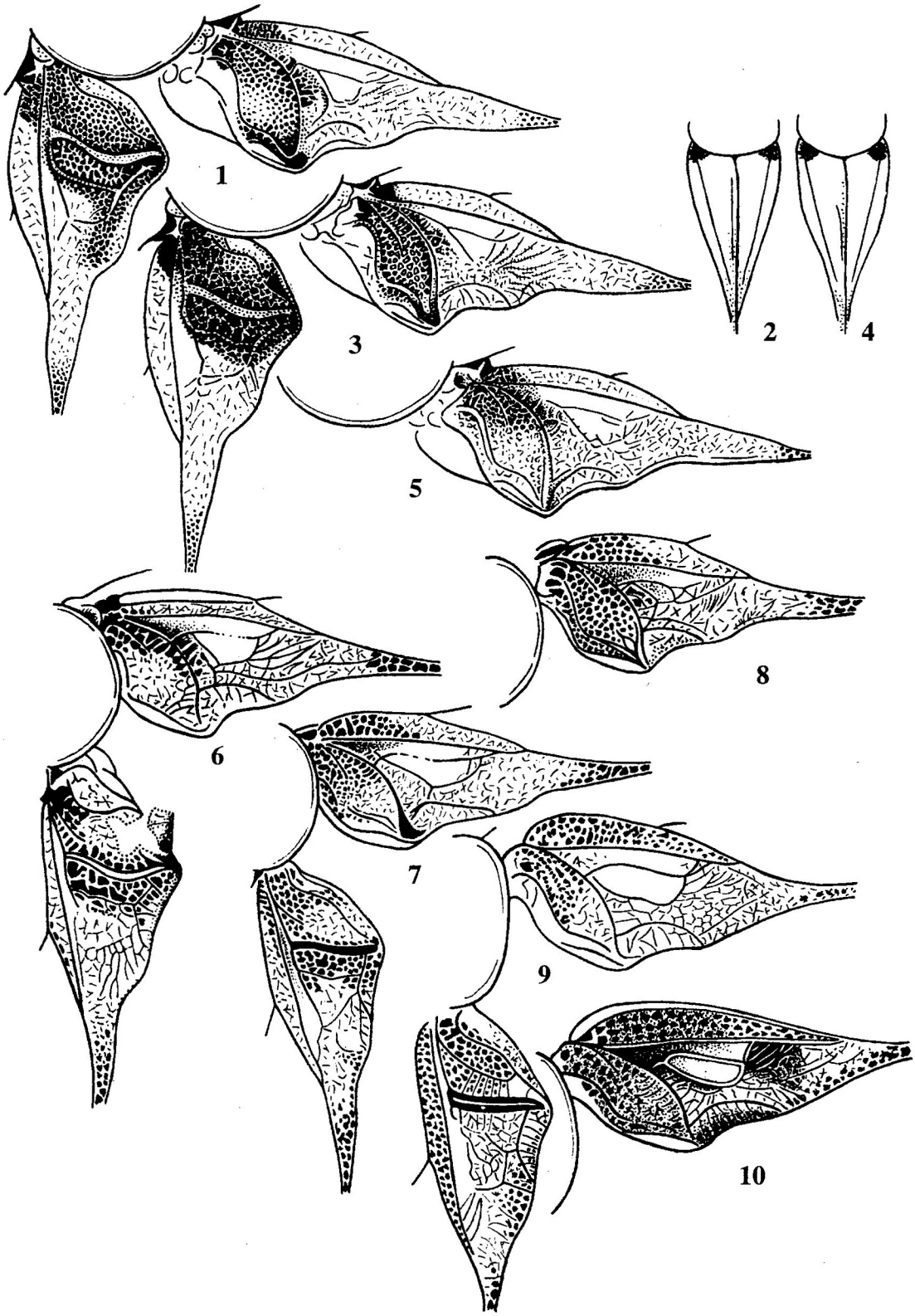
REMARKS. This genus is very similar to *Arnobia* Stål, 1876 in the general appearance and the presence of the heterogeneous net from veinlets of the lateral part of tegmina [Figs 34–39: more intensively colored parts (with dense veinlets) usually dotted, more transparent ones (with sparse veinlets) usually white], whereas the posterior edge of its pronotal disc is convex (without small median concavity) (Figs 1–10). It differs also in the dorsal part of the female tegmina with only a small dark basal spot (Figs 2, 4), the male genital plate with 2 or 4 apical lobules (1 pair of long lateral lobules and usually 1 pair of short medial ones; latter pair can be atrophied) (Figs 40, 45, 47–49, 53, 55, 57, 59, 60, 62, 76), the male genitalia with the denticulated upper unpaired sclerite (sometimes also with lower unpaired sclerite) and usually developed paired lateral plates (Figs 11–27, 30, 33, 79, 80). These genera are possibly only 2 subgenera of the same genus.

Species included: type species, *Phaula spinosolaminata* Brunner-Wattenwyl, 1878 (Java), *S. quadridens* Hebard, 1923 (Singapore), *S. armata* Ingrisch, 1994 (Thailand), *S. gialaiensis* sp.n., *S. thaiensis* sp.n., *S. grigorenkoi* sp.n., *S. daclacensis* sp.n., *S. annae* sp.n., *S. elzbietae* sp.n., *S. dohrni* sp.n., *S. soekarandae* sp.n., and possibly *Ph. chlorotica* Brunner-Wattenwyl, 1878 (Singapore), *S. micra* Hebard, 1923 (Singapore), *S. exigua* Ingrisch, 1994 (Thailand).

Stictophaula gialaiensis **sp.n.**
Figs 1, 2, 11, 12, 34, 40–44.

Holotype: ♂, Vietnam, prov. Gia Lai, 40 km N of Kannack, Tram Lap, forest, 1–14.XII.1988 (Gorochov) (ZIAS). Paratypes: Vietnam, prov. Gia Lai: ♂, 20 km N Kannack, Buon Luoi, forest, 3–11.XI.1993 (Gorochov) (ZIAS); 2 ♂♂, same data, but 22.III–30.IV.1995 (Gorochov) (ZIAS); ♀, 50–60 km N of Kannack, Kon Cha Rang, forest, 14–20.IV.1995 (Gorochov) (ZIAS).

DESCRIPTION. MALE (holotype). Green with rather long darkening on dorsal part of left tegmen, almost fully darkened basal area of dorsal part of right tegmen (Fig. 1), sparse small distinct dark spots on lateral part of tegmina (Fig. 34), numerous dark dots on fore legs (these dots forming 5 larger spots on upper part of femora), and almost fully transparent hind wings. Tegmina about 4 times longer than broad; their venation being typical of this genus (RA with 2 distinct branches; radial area between RS before bifurcation and M rather narrow; medial area rather wide; transverse venation of lateral part with slightly heterogeneous net of veinlets forming numerous more or less small irregular cells). Genital plate with comparatively short lateral apical lobules and distinctly developed small medial



Figs 1–10. *Stictophaula* spp.: 1, 2 — *S. gialaiensis* sp.n. (1, holotype); 3, 4 — *S. daclacensis* sp.n. (3, holotype); 5 — *S. thaiensis* sp.n.; 6 — *S. spinosolaminata* (Br.-W.); 7 — *S. annae* sp.n.; 8 — *S. elzbietae* sp.n.; 9 — *S. dohrni* sp.n. (holotype); 10 — *S. soekarandae* sp.n. Hind part of pronotum and dorsal part of tegmina from above: male (1, 3, 6, 7, 9), male without left tegmen (5, 8, 10), female (2, 4).

Рис. 1–10. *Stictophaula* spp.: 1, 2 — *S. gialaiensis* sp.n. (1, голотип); 3, 4 — *S. daclacensis* sp.n. (3, голотип); 5 — *S. thaiensis* sp.n.; 6 — *S. spinosolaminata* (Br.-W.); 7 — *S. annae* sp.n.; 8 — *S. elzbietae* sp.n.; 9 — *S. dohrni* sp.n. (голотип); 10 — *S. soekarandae* sp.n. Задняя часть переднеспинки и спинная часть надкрылий сверху: самец (1, 3, 6, 7, 9), самец без левого надкрылья (5, 8, 10), самка (2, 4).

apical lobules (Fig. 40); cerci with slightly S-shaped apical part (Fig. 41). Distal part of upper unpaired sclerite of genitalia long, with strongly denticulated apical part; upper and lower proximal parts of this sclerite long (lower one with strongly curved and slightly widened base); lower unpaired sclerite of genitalia undeveloped (Figs 11, 12).

VARIABILITY. Darkening of dorsal part of left tegmen sometimes divided into 2 parts: large proximal and small distal. Notch between medial apical lobules of genital plate may be slightly deeper than described above.

FEMALE. Similar to male in general appearance, but darkenings of dorsal part of tegmina small (Fig. 2). Genital plate as in Fig. 44. Ovipositor short, with distinctly rounded lower edge of lower valvae and slight notch at lower edge of upper valvae before apex or without this notch (Figs 42, 43).

LENGTH (mm). Body: male 20–25, female 22–26; body with wings: male 44–49, female 45–50; pronotum: male 5.8–6.4, female 6–6.3; tegmina: male 35–37, female 36–38; hind femora: male 18–21, female 19–21; ovipositor 8–9.

DIAGNOSIS. This species is similar to *S. bakeri*, *S. quadridens*, *S. spinosolaminata*, and *S. armata*, but differs in the small peculiarities of the male genital plate (Figs 40, 47, 48, 53, 55). It is also distinguished from *S. armata* by the shape of the upper unpaired sclerite of male genitalia (Figs 11, 15) and by the shorter ovipositor. The new species differs from *S. micra* in the presence of 2 branches of RA of tegmina, from *S. exigua* — in distinctly broader tegmina, from *S. chlorotica* — in the absence of transparent spots at the medial area of tegmina.

Stictophaula thaiensis **sp.n.**
Figs 5, 13, 14, 45, 46.

Holotype: ♂, Thailand, prov. Surat Thani, 40 km SWW of Phanom, environs of nat. park Khao Sok, forest, 20–29.VII.1996 (Gorochov) (ZIAS).

DESCRIPTION. MALE (holotype). Coloration as in *S. gialaiensis*, but dorsal part of right tegmen with only partly darkened basal area (Fig. 5). Shape and venation of tegmina, general shape of genital plate being also similar to those of *S. gialaiensis*, but lateral apical lobules of genital plate longer (Fig. 45); cerci almost without S-shaped apical part (Fig. 46). Distal part of upper unpaired sclerite of genitalia rather short, with strongly denticulated apical part; upper proximal part of this sclerite short; its lower proximal part long, almost not curved, and with rather strongly widened base; lower unpaired sclerite of genitalia undeveloped (Figs 13, 14).

FEMALE unknown.

LENGTH (mm). Body 23; body with wings 43; pronotum 5.7; tegmina 34; hind femora 19.

DIAGNOSIS. The new species is clearly distinguished from *S. gialaiensis* by the shape of the upper unpaired sclerite of male genitalia (Figs 11–14). It differs from other congeners in the same characters as *S. gialaiensis*.

Stictophaula grigorenkoi **sp.n.**
Figs 76–80.

Holotype: ♂, Thailand, prov. Ranong, environs of Pakchon, at light, 26.XII.1997 (Grigorenko) (ZIAS).

DESCRIPTION. MALE (holotype). Very similar to *S. thaiensis* (coloration of dorsal part of tegmina as in Fig. 3), but genital plate without medial lobules and with deep and narrow apical notch (Fig. 76), cerci with strongly arched apical part and very small apical denticle (Figs 77, 78), upper unpaired sclerite of genitalia distinctly narrower and with less numerous denticles (Figs 79, 80).

FEMALE unknown.

LENGTH (mm). Body 19; body with wings 45; pronotum 6.2; tegmina 35; hind femora 20.

DIAGNOSIS. The differences between this species and *S. thaiensis* are named above. *S. grigorenkoi* is also similar to *S. armata* in the shape of the male genital plate (Figs 53, 76), but the upper sclerite of its male genitalia is clearly narrower (Figs 15, 80) and slightly curved at the basal part. The new species differs from all other congeners in the characteristic shape of the apical part of male genital plate.

Stictophaula daclacensis **sp.n.**
Figs 3, 4, 16, 17, 49–52.

Holotype: ♂, Vietnam, prov. Dac Lac, environs of Ban Don on Ea Krong river, reserve Yok Don, 23–28.XI.1993 (Gorochov) (ZIAS). Paratypes: 2 ♂♂, 2 ♀♀, same data (ZIAS).

DESCRIPTION. MALE (holotype). Green with rather short darkening on dorsal part of left tegmen and almost fully darkened basal area of dorsal part of right tegmen (Fig. 3), sparse very small almost indistinct dark spots on lateral part of tegmina (except distal half and costal area), coloration of fore legs and hind wings as in *S. gialaiensis*. Tegmina about 4.2 times longer than broad; their venation also as in *S. gialaiensis*. Genital plate with rather long lateral apical lobules and reduced rounded medial apical lobules (Fig. 49); cerci with simple apical part (without traces of S-shaped bend) (Fig. 50). Distal part of upper unpaired sclerite of genitalia rather long, with slightly denticulated apical part; upper proximal part of this sclerite short; its lower proximal part rather long, almost not curved, and with moderately widened base; lower unpaired sclerite of genitalia undeveloped (Figs 16, 17).

VARIABILITY. Upper unpaired sclerite of genitalia sometimes with slightly higher distal half.

FEMALE. Similar to male in general appearance, but darkenings of dorsal part of tegmina as in female of *S. gialaiensis* (Fig. 4). Genital plate as in Fig. 52. Ovipositor similar to that of *S. gialaiensis* (without notch at lower edge of upper valvae before apex), but somewhat longer (Fig. 51).

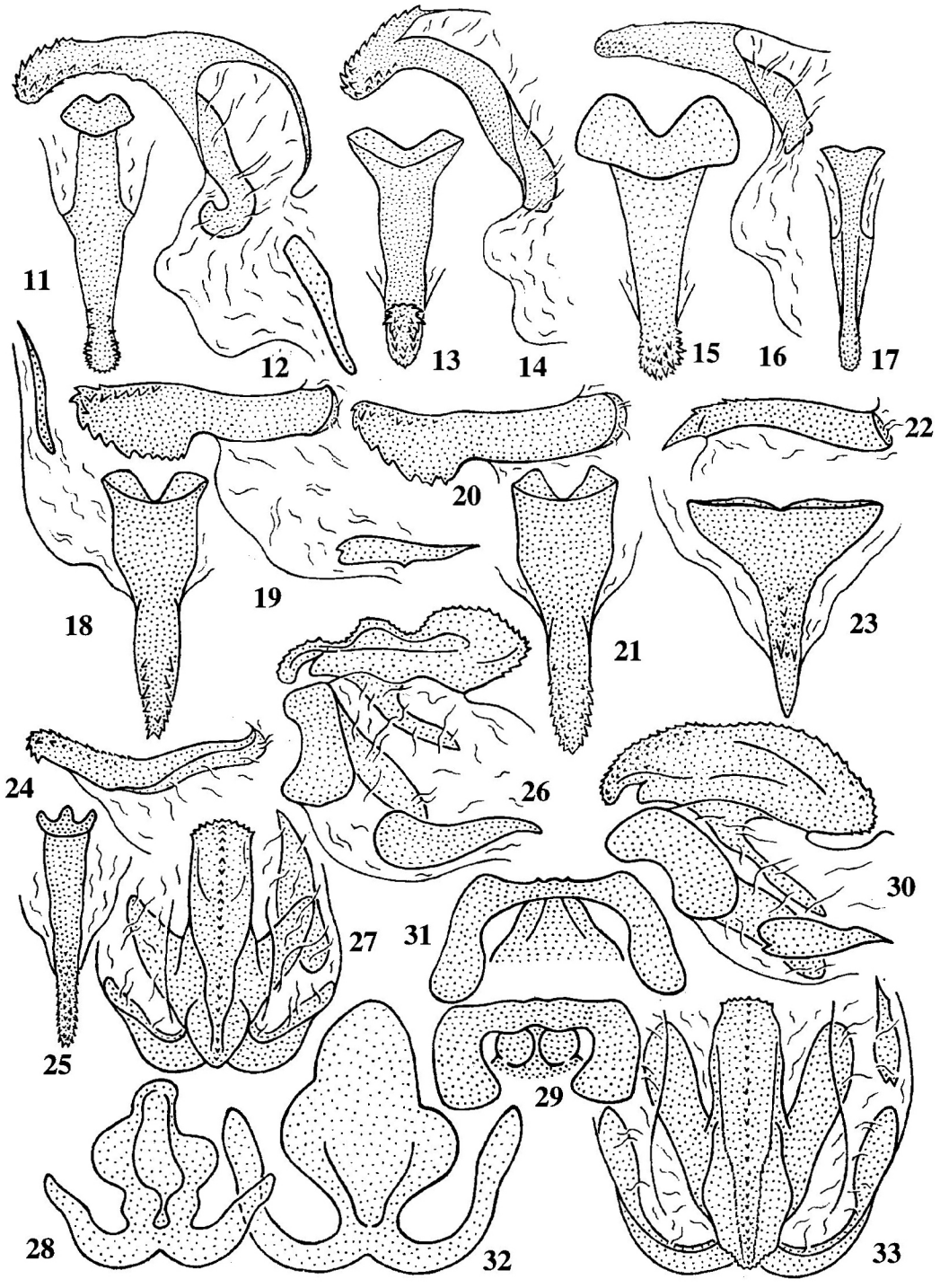
LENGTH (mm). Body: male 23–25, female 21–23; body with wings: male 46–49, female 48–50; pronotum: male 5.5–5.9, female 5.6–5.8; tegmina: male 35–37, female 38–39; hind femora: male 19–20, female 20–21; ovipositor 10.4–10.6.

DIAGNOSIS. The species distinctly differs from *S. bakeri*, *S. quadridens*, *S. spinosolaminata*, *S. armata*, *S. gialaiensis*, and *S. thaiensis* in the peculiarities of the male genital plate and the upper unpaired sclerite of male genitalia (Figs 11–21, 40–41, 45–50, 53–56). It is distinguished from *S. micra*, *S. exigua*, and *S. chlorotica* by the same characters as *S. gialaiensis*.

Stictophaula spinosolaminata (Brunner-Wattenwyl, 1878)
Figs 6, 18–21, 55, 56.

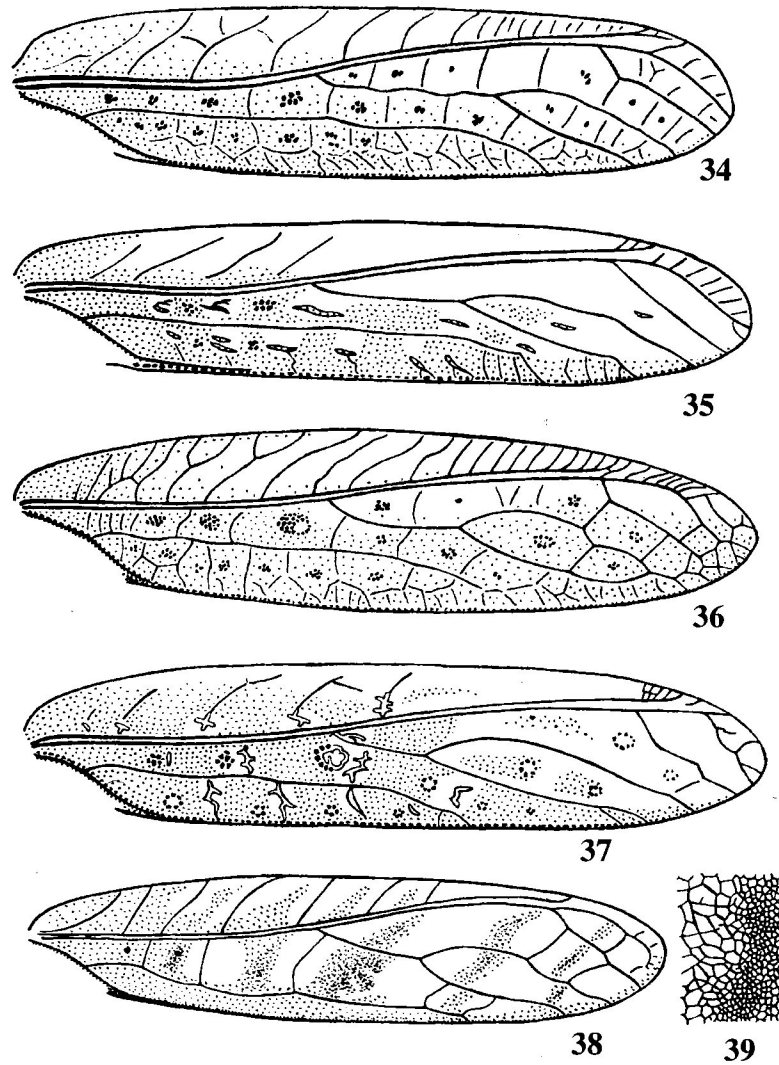
Material: 2 ♂♂, ♀, Java, "Java or.", "12/45" (MIZP).

DESCRIPTION. MALE. Similar to that of all previous species, but dorsal part of tegmina with rather small darkened area (Fig. 6), lateral part of tegmina almost



Figs 11–33. *Stictophaula* spp., male genitalia: 11, 12 — *S. gialaiensis* sp.n. (holotype); 13, 14 — *S. thaiensis* sp.n.; 15 — *S. armata* Ingr.; 16, 17 — *S. daclacensis* sp.n. (holotype); 18, 19 — *S. spinosolaminata* (Br.-W.); 20, 21 — another specimen of same species; 22, 23 — *S. annae* sp.n.; 24, 25 — *S. elzbietae* sp.n.; 26–29 — *S. dohrni* sp.n. (holotype); 30–33 — *S. soekarandae* sp.n. Upper unpaired sclerite from below (11, 13, 15, 17), from side (14, 16, 20, 22, 24), and from above (21, 23, 25); genital complex from side (12, 19, 26, 30) and from above (without one of paired plates) (18, 27, 33); lower unpaired (additional) sclerite from below (28, 32) and from behind (without proximal part) (29, 31). 15 — after Ingrisch, 1994.

Рис. 11–33. *Stictophaula* spp., гениталии самца: 11, 12 — *S. gialaiensis* sp.n. (голотип); 13, 14 — *S. thaiensis* sp.n.; 15 — *S. armata* Ingr.; 16, 17 — *S. daclacensis* sp.n. (голотип); 18, 19 — *S. spinosolaminata* (Br.-W.); 20, 21 — другой экземпляр того же вида; 22, 23 — *S. annae* sp.n.; 24, 25 — *S. elzbietae* sp.n.; 26–29 — *S. dohrni* sp.n. (голотип); 30–33 — *S. soekarandae* sp.n. Верхний непарный склерит снизу (11, 13, 15, 17), сбоку (14, 16, 20, 22, 24) и сверху (21, 23, 25); генитальный комплекс сбоку (12, 19, 26, 30) и сверху (без одной из парных пластинок) (18, 27, 33); нижний непарный (дополнительный) склерит снизу (28, 32) и сзади (без проксимальной части) (29, 31). 15 — по Ингришу, 1994.



Figs 34–39. *Stictophaula* spp. and *Arnobia* spp.: 34 — *S. gialaiensis* sp.n. (holotype); 35 — *S. dohrni* sp.n. (holotype); 36 — *A. vietensis* sp.n. (holotype); 37 — *A. trichopus* (Haan); 38, 39 — *A. pilipes tropica* subsp.n. Lateral part of tegmen (34–38) and its venation in region of intensively green band (39).

Рис. 34–39. *Stictophaula* spp. и *Arnobia* spp.: 34 — *S. gialaiensis* sp.n. (голотип); 35 — *S. dohrni* sp.n. (голотип); 36 — *A. vietensis* sp.n. (голотип); 37 — *A. trichopus* (Haan); 38, 39 — *A. pilipes tropica* subsp.n. Боковая часть надкрылья (34–38) и ее жилкование в области интенсивно зеленой полосы (39).

without darkish spots and with sparse indistinct small transparent spots between R and Cu, pronotum, lateral parts of pterothorax, abdomen, middle and hind femora with numerous reddish brown dots, genital plate with long lateral and medial paired apical lobules (Fig. 55), cerci rather strong and with simple apical part (Fig. 56), upper unpaired sclerite of genitalia with large upper proximal part and without lower proximal part (Figs 18–21).

FEMALE. Similar to male in general appearance, but darkenings of dorsal part of tegmina as in female of *S. gialaiensis* and *S. daclacensis*. Genital plate and ovipositor similar to drawings by Ingrisch [1994: Abb. 24, 25]; outline of ovipositor in profile almost as in female of *S. gialaiensis* from Fig. 42.

LENGTH (mm). Body: male 23–34, female 22; body with wings: male 43–45, female 46; pronotum: male 5.5–6, female 6; tegmina: male 35–36, female 37; hind femora: male 19–20, female 20; ovipositor 8.

DISTRIBUTION. Java (other records require re-examination)

Stictophaula annae **sp.n.**

Figs 7, 22, 23, 59.

Holotype: ♂, Kalimantan, "Borneo", "12/45" (MIZP).

DESCRIPTION. MALE (holotype). Very similar to *S. spinosolaminata*, but reddish brown dots of thorax and abdomen indistinct, stridulatory vein of tegmina very dark (Fig. 7), lateral part of tegmina with row of darkish dots along anal edge, genital plate with very short paired medial apical lobules (Fig. 59), upper unpaired sclerite of genitalia with short acute distal part and rather long proximal part strongly widened at base (Figs 22, 23).

FEMALE unknown.

LENGTH (mm). Body 24; body with wings 47; pronotum 6; tegmina 36; hind femora 21.

DIAGNOSIS. The differences from *S. spinosolaminata* are named above. The new species is distinguished from *S. micra*, *S. exigua*, and *S. chlorotica* by the same characters as *S. gialaiensis*. It differs from all other congeners in the absence of the lower proximal part of the upper unpaired male genital sclerite and the characteristic shape of the male genital plate (Fig. 57).

ETYMOLOGY. The new species is named in honour of Polish orthopterist Dr. Anna Liana (MIZP) who helped me in my work with the MIZP collection.

Stictophaula elzbietae **sp.n.**

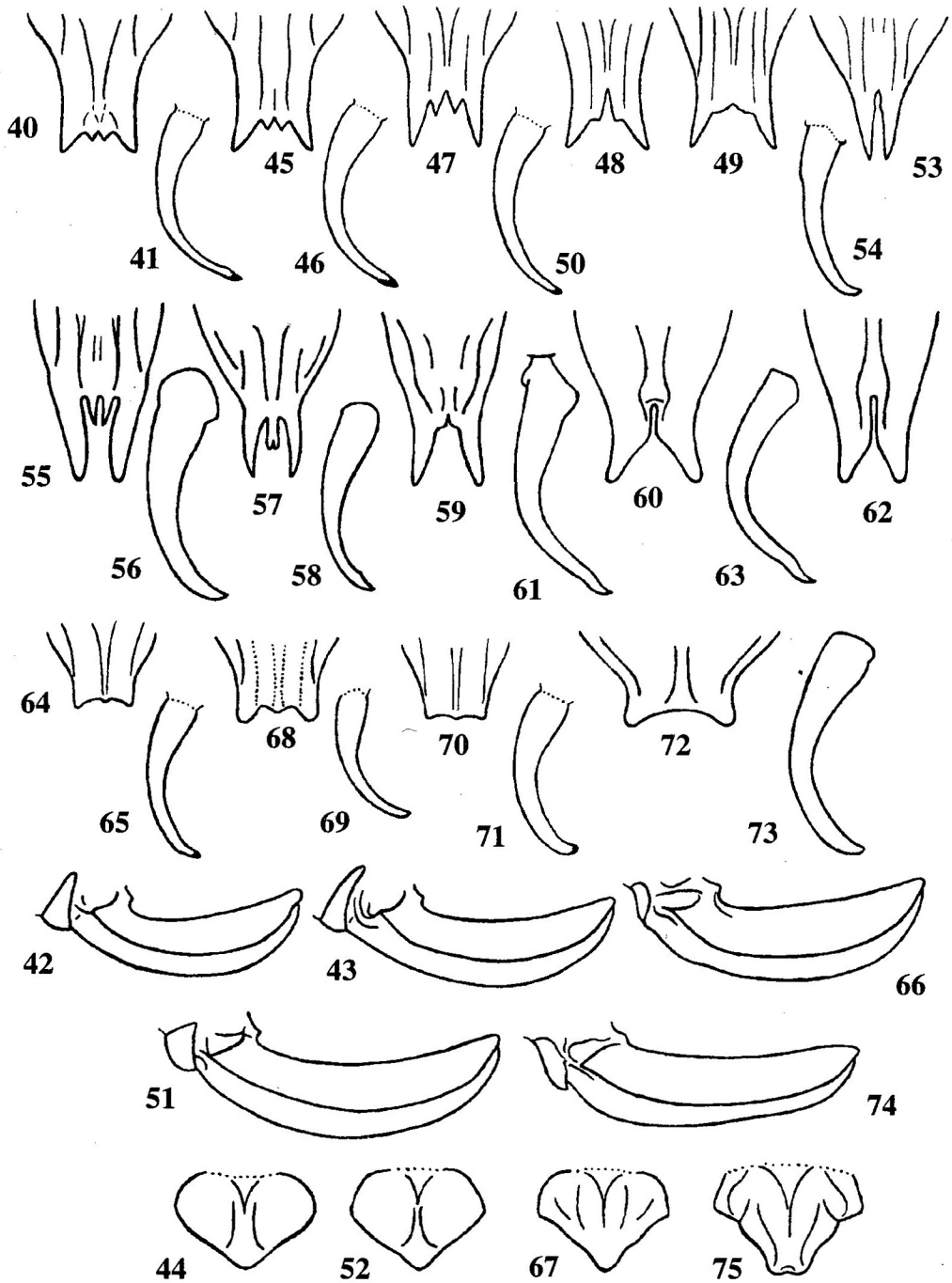
Figs 8, 24, 25, 57, 58.

Holotype: ♂, Kalimantan, "Borneo", "12/45" (MIZP).

DESCRIPTION. MALE (holotype). Very similar to *S. spinosolaminata* and *S. annae*, but body with reddish brown dots on pronotum only, darkening on dorsal part of tegmina slightly larger (especially on right tegmen) (Fig. 8), stridulatory vein of tegmina darkish, lateral part of tegmina with slightly more distinct dark spots (including dark dots along anal edge), genital plate with paired medial apical lobules long and partly fused with each other (Fig. 57), cerci with slightly distinct small sloping projection near apex (Fig. 58), upper unpaired sclerite of genitalia with short distal and rather narrow proximal parts (Figs 24, 25).

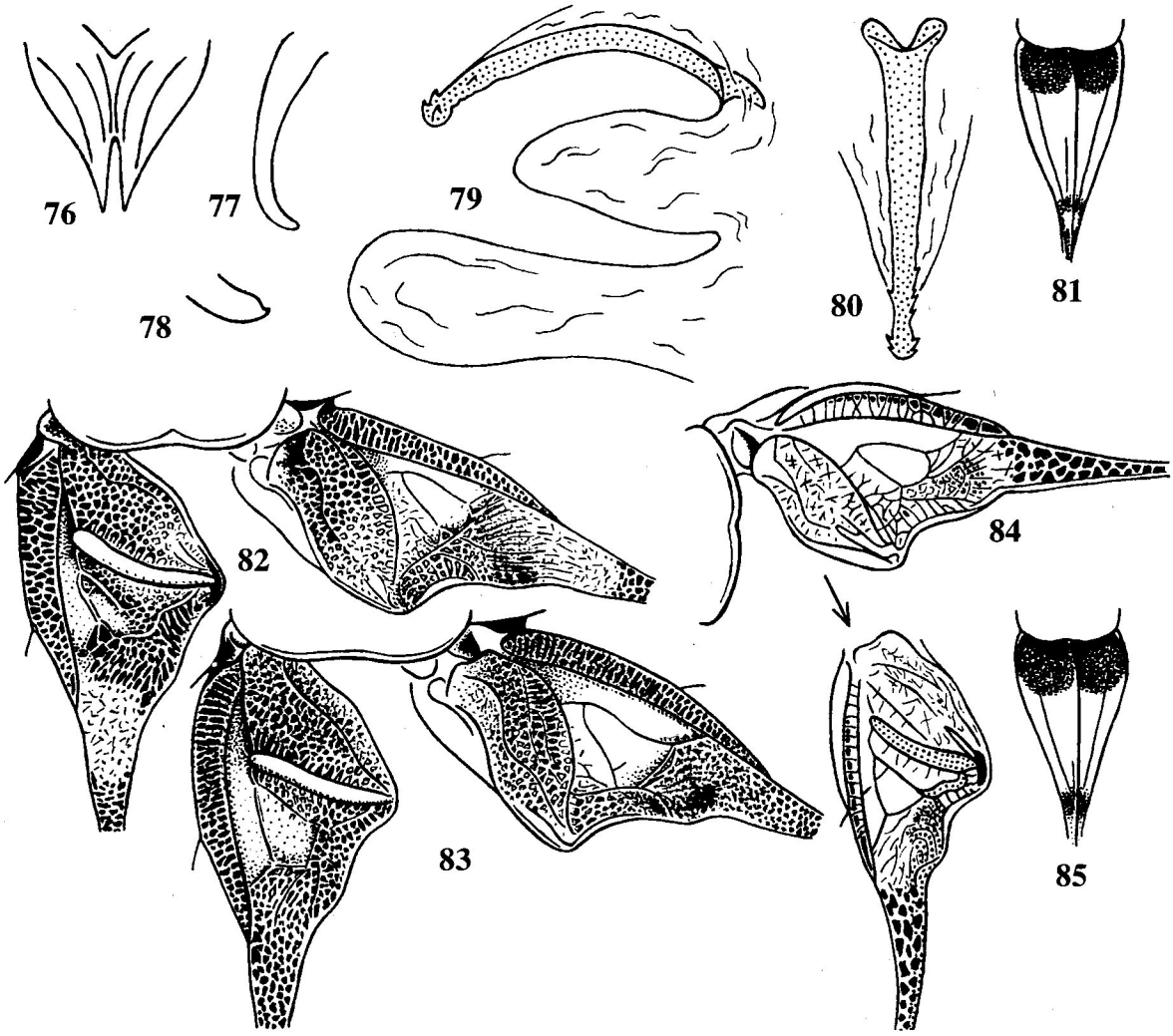
FEMALE unknown.

LENGTH (mm). Body 22; body with wings 43; pronotum 5.5; tegmina 34; hind femora 18.



Figs 40–75. *Stictophaula* spp. and *Arnobia* spp.: 40–44 — *S. gialaiensis* sp.n. (40, 41, holotype); 45, 46 — *S. thaiensis* sp.n.; 47 — *S. quadridens* Heb.; 48 — *S. bakeri* Heb.; 49-52 — *S. daclacensis* sp.n. (49, 50, holotype); 53, 54 — *S. armata* Ingr.; 55, 56 — *S. spinosolaminata* (Br.-W.); 57, 58 — *S. elzbietae* sp.n.; 59 — *S. annae* sp.n.; 60, 61 — *S. dohrni* sp.n. (holotype); 62, 63 — *S. soekarandae* sp.n.; 64–67 — *A. vietensis* sp.n. (64, 65, holotype); 68, 69 — *A. ocellata* Ingr.; 70, 71 — *A. pilipes tropica* subsp.n.; 72, 73 — *A. trichopus* (Haan); 74, 75 — *A. inocellata* sp.n. Distal part of male genital plate from below (40, 45, 47–49, 53, 55, 57, 59, 60, 62, 64, 68, 70, 72); left male cercus from above (41, 46, 50, 54, 56, 58, 61, 63, 65, 69, 71, 73); ovipositor from side (42, 43, 51, 66, 74); female genital plate from below (44, 52, 67, 75). 47, 48 — after Hebard, 1923; 53, 54, 68, 69 — after Ingrisch, 1994.

Рис. 40–75. *Stictophaula* spp. и *Arnobia* spp.: 40–44 — *S. gialaiensis* sp.n. (40, 41, голотип); 45, 46 — *S. thaiensis* sp.n.; 47 — *S. quadridens* Heb.; 48 — *S. bakeri* Heb.; 49–52 — *S. daclacensis* sp.n. (49, 50, голотип); 53, 54 — *S. armata* Ingr.; 55, 56 — *S. spinosolaminata* (Br.-W.); 57, 58 — *S. elzbietae* sp.n.; 59 — *S. annae* sp.n.; 60, 61 — *S. dohrni* sp.n. (голотип); 62, 63 — *S. soekarandae* sp.n.; 64–67 — *A. vietensis* sp.n. (64, 65, голотип); 68, 69 — *A. ocellata* Ingr.; 70, 71 — *A. pilipes tropica* subsp. n.; 72, 73 — *A. trichopus* (Haan); 74, 75 — *A. inocellata* sp.n. Дистальная часть генитальной пластинки самца снизу (40, 45, 47–49, 53, 55, 57, 59, 60, 62, 64, 68, 70, 72); левый церк самца сверху (41, 46, 50, 54, 56, 58, 61, 63, 65, 69, 71, 73); яйцеклад сбоку (42, 43, 51, 66, 74); генитальная пластинка самки снизу (44, 52, 67, 75). 47, 48 — по Гебарду, 1923; 53, 54, 68, 69 — по Ингришу, 1994.



Figs 76–85. *Stictophaula grigorenkoi* sp.n. (76–80) and *Arnobia* spp.: 81, 82 — *A. vietensis* sp.n. (82, holotype); 83 — *A. pilipes tropica* subsp.n. (holotype); 84 — *A. trichopus* (Haan); 85 — *A. inocellata* sp.n. Distal part of male genital plate from below (76); left male cercus (77) and its apex (78) from above; upper unpaired sclerite of male genitalia from side (79) and from below (80); hind part of pronotum and dorsal part of tegmina from above: female (81, 85), male (82–84).

Рис. 76–85. *Stictophaula grigorenkoi* sp.n. (76–80) и *Arnobia* spp.: 81, 82 — *A. vietensis* sp.n. (82, голотип); 83 — *A. pilipes tropica* subsp.n. (голотип); 84 — *A. trichopus* (Haan); 85 — *A. inocellata* sp.n. Дистальная часть генитальной пластинки самца снизу (76); левый церк самца (77) и его вершина (78) сверху; верхний непарный склерит гениталий самца сбоку (79) и снизу (80); задняя часть переднеспинки и спинная часть надкрылий сверху: самка (81, 85), самец (82–84).

DIAGNOSIS. The differences from *S. spinosolaminata* and *S. annae* are named above. The new species is distinguished from all other congeners by the same characters as *S. annae* (Fig. 57).

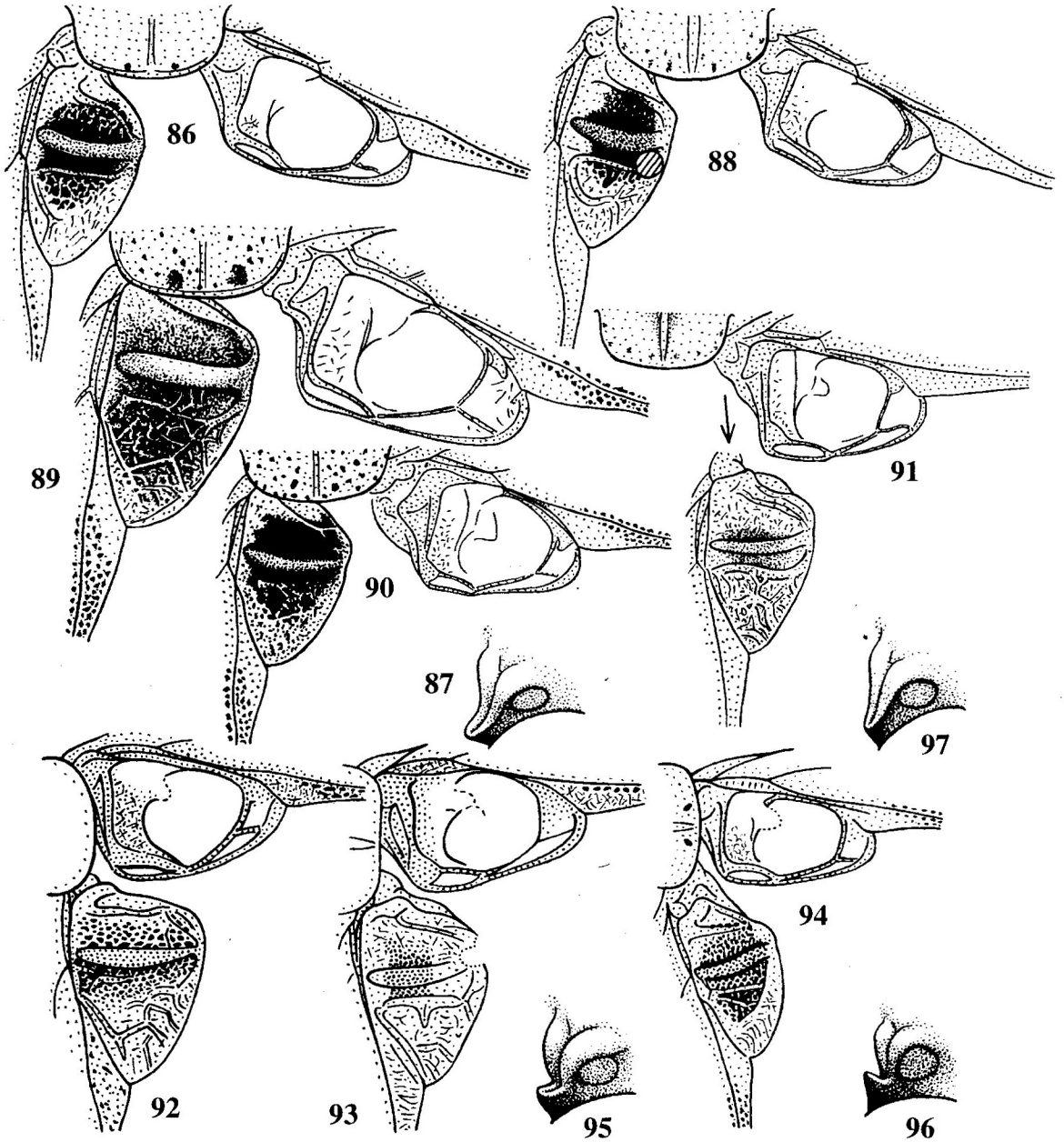
ETYMOLOGY. This species is named in honour of Polish orthopterist Dr. Elzbieta Warchalowska-Sliwa (Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Krakow) who helped me in many ways during my visit to Poland.

Stictophaula dohrni **sp.n.**

Figs 9, 26–29, 35, 60, 61.

Holotype: ♂, Sumatra, "Soekaranda", "Dohrn", "12/45" (MIZP). Paratype: ♂, same data (MIZP).

DESCRIPTION. MALE (holotype). Greenish with rather small and slight darkening on dorsal part of tegmina (Fig. 9), more or less transparent costal, subcostal, and interradial areas of lateral part of tegmina (Fig. 35), rather numerous reddish brown dots on pronotum, blackish small spots on fore femora and near tympana on fore tibiae, and almost fully transparent hind wings. Tegmina about 4 times longer than broad; their venation as in Figs 9 and 35 (with very characteristic longitudinal short stick-like thickenings between Cu, M, and branches of R). Genital plate with medium-sized lateral apical lobules, small and very sloping medial apical lobules, and rather deep and narrow notch between them (Fig. 60); cerci with slightly S-shaped apical part (Fig. 61). Upper unpaired sclerite of genitalia large and very characteristic,



Figs 86–97. *Mirollia* spp.: 86, 87 — *M. fallax* B.-Bien. (86, holotype); 88 — *M. composita* B.-Bien.; 89 — *M. liui* B.-Bien. (holotype); 90 — *M. beybienkoi* sp.n.; 91 — *M. proxima* sp.n.; 92 — *M. javae* sp.n.; 93 — *M. carinata* (Haan); 94 — *M. ranongi* sp.n.; 95 — *M. carinata* (?); 96 — *M. cerciata* Heb.; 97 — *M. foliolum* sp.n. Hind part of pronotum and dorsal part of tegmina from above (male) (86, 88–94); rostrum of head partly from above and partly from side (87, 95–97).

Рис. 86–97. *Mirollia* spp.: 86, 87 — *M. fallax* B.-Bien. (86, голотип); 88 — *M. composita* B.-Bien.; 89 — *M. liui* B.-Bien. (голотип); 90 — *M. beybienkoi* sp.n.; 91 — *M. proxima* sp.n.; 92 — *M. javae* sp.n.; 93 — *M. carinata* (Haan); 94 — *M. ranongi* sp.n.; 95 — *M. carinata* (?); 96 — *M. cerciata* Heb.; 97 — *M. foliolum* sp.n. Задняя часть переднеспинки и спинная часть надкрылий сверху (самец) (86, 88–94); рострум головы частично сверху и частично сбоку (87, 95–97).

with rather short paired lateral processes (Figs 26, 27); lower unpaired sclerite of genitalia developed, large, with rather short paired lateral and unpaired median lobes (latter lobe asymmetrical and with paired almost globe-shaped thickenings at base) (Figs 28, 29).

VARIABILITY. Upper unpaired sclerite of paratype's genitalia in profile with more arched upper edge (almost as in Fig. 30).

FEMALE unknown.

LENGTH (mm). Body 19–21; body with wings 45–48; pronotum 5–5.5; tegmina 34–36; hind femora 21–23.

DIAGNOSIS. The new species differs from all species of the genus with known male genitalia in the presence of the unpaired lower male genital sclerite, from *S. chlorotica* — in the stick-like thickenings of tegminal venation, and from all other congeners by the same characters as *S. gialaiensis*.

Stictophaula soekarandae **sp.n.**
Figs 10, 30–33, 62, 63.

Holotype: ♂, Sumatra, "Soekaranda", "Dohrn", "12/45" (MIZP).

DESCRIPTION. MALE (holotype). Very similar to *S. dohrni*, but dorsal part of tegmina clearly darker (Fig. 10), pronotum without reddish brown dots, genital plate with deeper notch at apex (Fig. 62), cerci slightly more arched (Fig. 63), upper unpaired sclerite of genitalia with more numerous denticles at distal part and longer paired lateral processes (Figs 30, 33), lower unpaired sclerite of genitalia larger and with distinctly longer paired lateral and unpaired median lobes (latter lobe without globe-shaped thickenings at base) (Figs 31, 32).

FEMALE unknown.

LENGTH (mm). Body 22; body with wings 51; pronotum 6; tegmina 38; hind femora 24.

DIAGNOSIS. The differences from *S. dohrni* are named above. *S. soekarandae* is distinguished from all other congeners by the same characters as *S. dohrni*.

Genus *Arnobia* Stal, 1876

Type species *Locusta (Phaneroptera) pilipes* Haan, 1842 (Japan).

REMARKS. This genus (or subgenus ?) differs from *Stictophaula* in the presence of the small median concavity at the posterior edge of pronotal disc (Figs 81-85), the large dark basal spot on the dorsal part of female tegmina (Figs 81, 85), only 2 or 3 very short apical lobules of the male genital plate (Figs 64, 68, 70, 72), and the absence of unpaired sclerites of the male genitalia (paired small and very narrow lateral plates are usually developed).

Species included: type species, *Locusta (Phaneroptera) trichopus* Haan, 1842 (Java), *Stictophaula ocellata* Ingrisch, 1994 (Thailand), *A. vietensis* sp.n., and *A. inocellata* sp.n.

Arnobia vietensis **sp.n.**
Figs 36, 64–67, 81, 82.

Holotype: ♂, Vietnam, prov. Gia Lai, 20 km N of Kannack, Buon Luoi, forest, 22–31.III.1995 (Gorochov) (ZIAS). Paratypes: ♂, 3 ♀♀, same data, but 1.IV–10.V.1995 (Gorochov) (ZIAS).

DESCRIPTION. MALE (holotype). Almost fully green; dorsal part of tegmina darkish with lighter spot before narrow distal half, lightish stridulatory vein of left tegmen, transparent stridulatory areas and light distal half of basal area of right tegmen (Fig. 82); lateral part of tegmina with sparse ocellus-like spots (dark rings around light centre) on R-M area and simple small dark spots on intermedial area; fore legs spotted (as in *S. gialaiensis*, but with 4 darkish spots and 4 yellowish spots on upper part of femora); hind wings almost fully transparent. Tegmina about 4.1 times longer than broad; their venation typical of this genus (Fig. 36). Lateral apical lobules of genital plate small, but slightly larger than median one (Fig. 64); cerci with rather long apical narrowing (Fig. 65).

VARIABILITY. Median apical lobule of genital plate of paratype almost indistinct.

FEMALE. Similar to male, but darkenings of dorsal part of tegmina as in Fig. 81. Genital plate as in Fig. 67. Ovipositor rather short, with distinctly rounded lower edge of lower valvae and without notch of lower edge of upper valvae before apex (Fig. 66).

LENGTH (mm). Body: male 22–24, female: 18–31; body with wings: male 48–50, female 49–53; pronotum: male 6.1–6.2, female 5.9–6.4; tegmina: male 37–38, female 38–42; hind femora: male 20–21, female 21–23; ovipositor 8.5–9.5.

DIAGNOSIS. This species is very similar to *A. ocellata* in coloration of tegmina [Ingrisch, 1994], but differs in smaller apical lobules of the male genital plate (Figs 64, 68) and in somewhat shorter ovipositor with a strongly convex lower edge. It is distinguished from *A. trichopus* by the absence of the whitish veinlets at the lateral part of tegmina and from *A. pilipes* — by the presence of the ocellus-like spots of tegmina.

Arnobia inocellata **sp.n.**
Figs 74, 75, 85.

Holotype: ♀, Thailand, prov. Surat Thani, 40 km SWW of Phanom, environs of nat. park Khao Sok, 20–29.VII.1996 (Gorochov) (ZIAS).

DESCRIPTION. FEMALE (holotype). Almost fully green; coloration of dorsal part of tegmina similar to that of *A. vietensis*, but basal dark spot somewhat larger and darkening before narrow distal part without light middle spot (Fig. 85); lateral part of tegmina with only sparse simple small darkened spots; fore legs slightly spotted (femora with only 2 groups of rather sparse darkish dots on their proximal half; tibiae with darkish dots only near inner tympanum); hind wings almost fully transparent. Shape and venation of tegmina as in *A. vietensis*. Genital plate as in Fig. 75. Ovipositor slightly longer than in *A. vietensis*, with almost straight lower edge of lower valvae and without notch of lower edge of upper valvae before apex (Fig. 74).

MALE unknown.

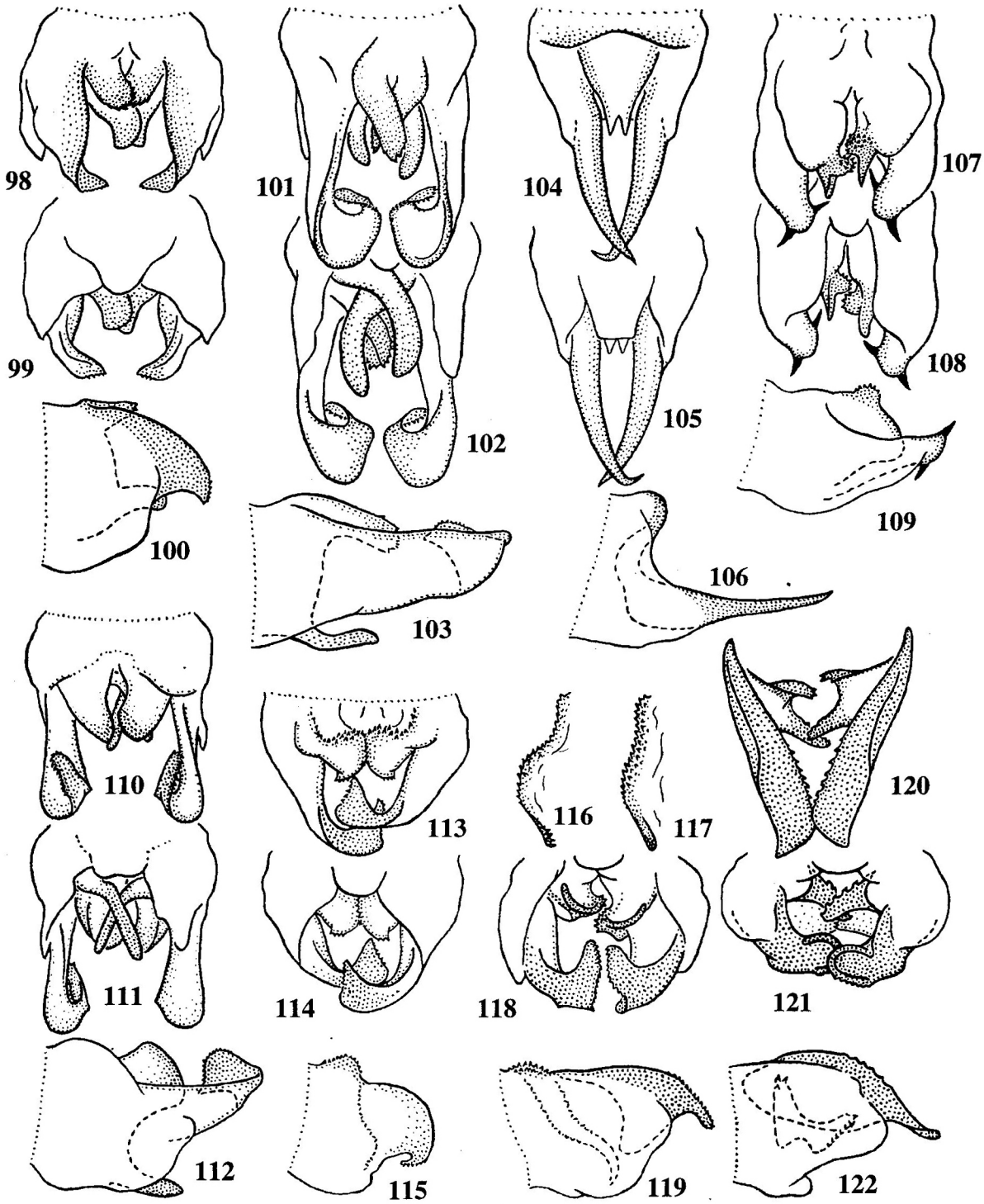
LENGTH (mm). Body 25; body with wings 48; pronotum 6; tegmina 37; hind femora 22; ovipositor 10.2.

DIAGNOSIS. The present species differs from *A. ocellata*, *A. trichopus*, *A. vietensis* in the absence of ocellus-like spots on the lateral part of tegmina, and from *A. pilipes* — in the absence of transparent areas between the intensively green oblique bands on the same part of tegmina.

Arnobia pilipes tropica **subsp.n.**
Figs 8–10, 38, 39.

Holotype: ♂, Malaysia, Pahang, environs of Kuala Tahan on Tembeling river, near nat. park Taman Negara, forest, 12–16.VII.1996 (Gorochov) (ZIAS). Paratypes: ♂, ♀, Sumatra, "Soekaranda" (MIZP); ♂, Kalimantan, "Borneo" (MIZP).

DESCRIPTION. MALE (holotype). Green with almost fully darkish dorsal part of tegmina (only stridulatory vein of left tegmen lightish and stridulatory areas of right tegmen transparent) (Fig. 83), transparent areas and intensively green oblique bands on lateral part of tegmina (Fig. 38), very sparse and slight brownish dots on fore legs, and fully transparent hind wings. Shape of tegmina as in *A. vietensis*; their venation also similar to that of *A. vietensis*, but radial area between RS (before bifurcation) and M broad, intermedial area narrow, transverse venation with very small cells in region of intensively green bands and comparatively large irregular cells in region of transparent areas (Fig. 39). Lateral and median lobules of genital plate small and almost equal (Fig. 70); cerci with rather short apical narrowing (Fig. 71).



Figs 98–122. *Mirollia* spp., male genitalia: 98–100 — *M. fallax* B.-Bien. (holotype); 101–103 — *M. composita* B.-Bien.; 104–106 — *M. liui* B.-Bien. (holotype); 107–109 — *M. beybienkoi* sp.n.; 110–112 — *M. ranongi* sp.n.; 113–116 — *M. proxima* sp.n.; 117–119 — *M. carinata* (Haan); 120–122 — *M. javae* sp.n. Genital complex from above (98, 101, 104, 107, 110, 113), from below (99, 102, 105, 108, 111, 114), from side (100, 103, 106, 109, 112, 115, 119, 122), from below and slightly behind (118, 121); inner edge of right medial dorsal genital lobe (116, 117) and all genital sclerites (120) from behind and slightly above.

Рис. 98–122. *Mirollia* spp., гениталии самца: 98–100 — *M. fallax* B.-Bien. (голотип); 101–103 — *M. composita* B.-Bien.; 104–106 — *M. liui* B.-Bien. (голотип); 107–109 — *M. beybienkoi* sp.n.; 110–112 — *M. ranongi* sp.n.; 113–116 — *M. proxima* sp.n.; 117–119 — *M. carinata* (Haan); 120–122 — *M. javae* sp.n. Генитальный комплекс сверху (98, 101, 104, 107, 110, 113), снизу (99, 102, 105, 108, 111, 114), сбоку (100, 103, 106, 109, 112, 115, 119, 122), снизу и слегка сзади (118, 121); внутренний край правой медиальной дорсальной генитальной лопасти (116, 117) и все генитальные склериты (120) сзади и слегка сверху.

VARIABILITY. Paratype from Kalimantan with slightly broader tegmina and slightly larger apical lobules of genital plate.

FEMALE. Similar to male in general appearance, but darkenings of dorsal part of tegmina large, rounded. Genital plate rather narrow, with almost truncated apex; ovipositor rather short, with slightly rounded lower edge of lower valvae and without notch at lower edge of upper valvae before apex.

LENGTH (mm). Body: male 22–31, female 27; pronotum: male 5.7–5.9, female 5.7; tegmina: male 36–39, female 40; hind femora: male 18–22, female 20.5; ovipositor 9.

DIAGNOSIS. This subspecies is distinguished from the sole palaearctic subspecies known only from Japan (*A. pilipes pilipes*) by very distinct oblique intensively green bands on the lateral part of tegmina and broader radial tegminal area.

Arnobia trichopus (Haan, 1842)
Figs 37, 72, 73, 84.

MATERIAL: ♂, Sumatra, "Deli", "12/45" (MIZP).

DESCRIPTION. MALE. Similar to *A. vietensis* and *A. ocellata*. Yellowish green with numerous reddish brown dots on pronotum, middle legs, hind femora, lateral parts of pterothorax, and abdomen, very numerous dark brown dots and 5 whitish yellow spots on upper half of fore femora, sparse brown dots on fore tibiae (these dots especially distinct near tympana), characteristic darkenings on dorsal part of tegmina (Fig. 84), several whitish short veinlets and round spots on lateral part of tegmina (these short veinlets usually situated into transparent spots; round spots usually with dark rim or its part and sometimes with transparent centre) (Fig. 37). Apex of genital plate with only pair of short lateral lobules (Fig. 72); cerci with medium-sized apical narrowing (Fig. 73).

LENGTH (mm). Body 24; body with wings 46; pronotum 5.5; tegmina 37; hind femora 21.

DISTRIBUTION. Java; Sumatra (new record).

Genus *Mirollia* Stål, 1873

Type species *Phylloptera carinata* Haan, 1842 (Java).

REMARKS. Species of this genus are well distinguished from each other by the sclerotized structure of male genitalia, but these structures have been poorly described up to now. Therefore the short redescriptions of several available species are given hereinafter.

Mirollia fallax Bey-Bienko, 1962
Figs 86, 87, 98–100, 123–128.

Holotype: ♂, China, Yunnan, "устье Наньцихэ, 80 м. 8.VI.1956. Хуан Кэ-жень и др." [mouth of Nandinghe River, leg. Huang Ke-ren etc.] (IEAS). Material: ♀, same data (ZIAS); 2 ♂♂, ♀, Vietnam, prov. Ha Son Binh, Da Bac, Tuly, shrubs, 16–23.X.1990 (Gorochov, Belokobylskij) (ZIAS).

REMARKS. This species is well described by Bey-Bienko [1962]. It is only necessary to note that the apex of rostrum is distinctly curved (Fig. 87), coloration (except dorsal part of male tegmina) varies from fully yellowish green to yellowish green with very sparse slight darkish dots, the dorsal part of left male tegmen with a rather large dark brown spot, on the right tegmen there is an elongated transparent stridulatory area (Fig. 86), the male genital plate as in Fig. 123, the male cercus is rather short and not very strongly curved (Fig. 124), the male genitalia as in Figs 98–100, the female genital plate with a rather large median lobe of distal edge (Figs 125–128), the ovipositor is similar to that of *M. foliolum* sp.n. (Fig. 158).

DISTRIBUTION. Yunnan; Vietnam (new record).

Mirollia composita Bey-Bienko, 1962
Figs 88, 101–103, 129, 130.

Holotype: ♂, China, Yunnan, "Сяомоньян [Xiao Menle], 810 м. 25.III.1957. Ван Шу-юн" (IEAS).

REMARKS. This species is also well described by Bey-Bienko [1962]. It has the apex of rostrum as in *M. fallax*. Its coloration (besides of the dorsal part of male tegmina) is yellowish green with very sparse slight darkish dots; the dorsal part of left male tegmen with a rather small dark brown spot; the transparent stridulatory area of right tegmen is similar to that of *M. fallax* (Fig. 88). The male genital plate almost as in *M. fallax*, but with the distal part slightly widening to its apex (Fig. 129); the male cercus is rather long and not very strongly curved (Fig. 130); the male genitalia as in Figs 101–103, with lateral dorsal lobes distinctly longer than in *M. fallax*. Female is unknown.

DISTRIBUTION. China: Yunnan.

Mirollia liui Bey-Bienko, 1957
Figs 89, 104–106, 131–136.

Holotype: ♂, China, Yunnan, "окр. Сымао [env. of Simao], 1350 м. 14.IV.1955. Крыжановский [leg. Kryzhanovskij]" (IEAS). Material: China, Yunnan: 2 ♂♂, "окр. Фохая, Ханношань, 1100–1400 м. 4.III–28.IV.1957. Пу Фу-ди [leg. Pu Fu-ji]" (ZIAS); ♀, "Цзингу [Kinku], 930 м. 21.IV.1955. В. Попов [leg. V. Popov]" (ZIAS); ♀, "окр. Сяомуньян [env. of Xiao Menle]. 29.XI.58. Е.З. Таскаева [leg. E.Z. Taskayeva]" (ZIAS).

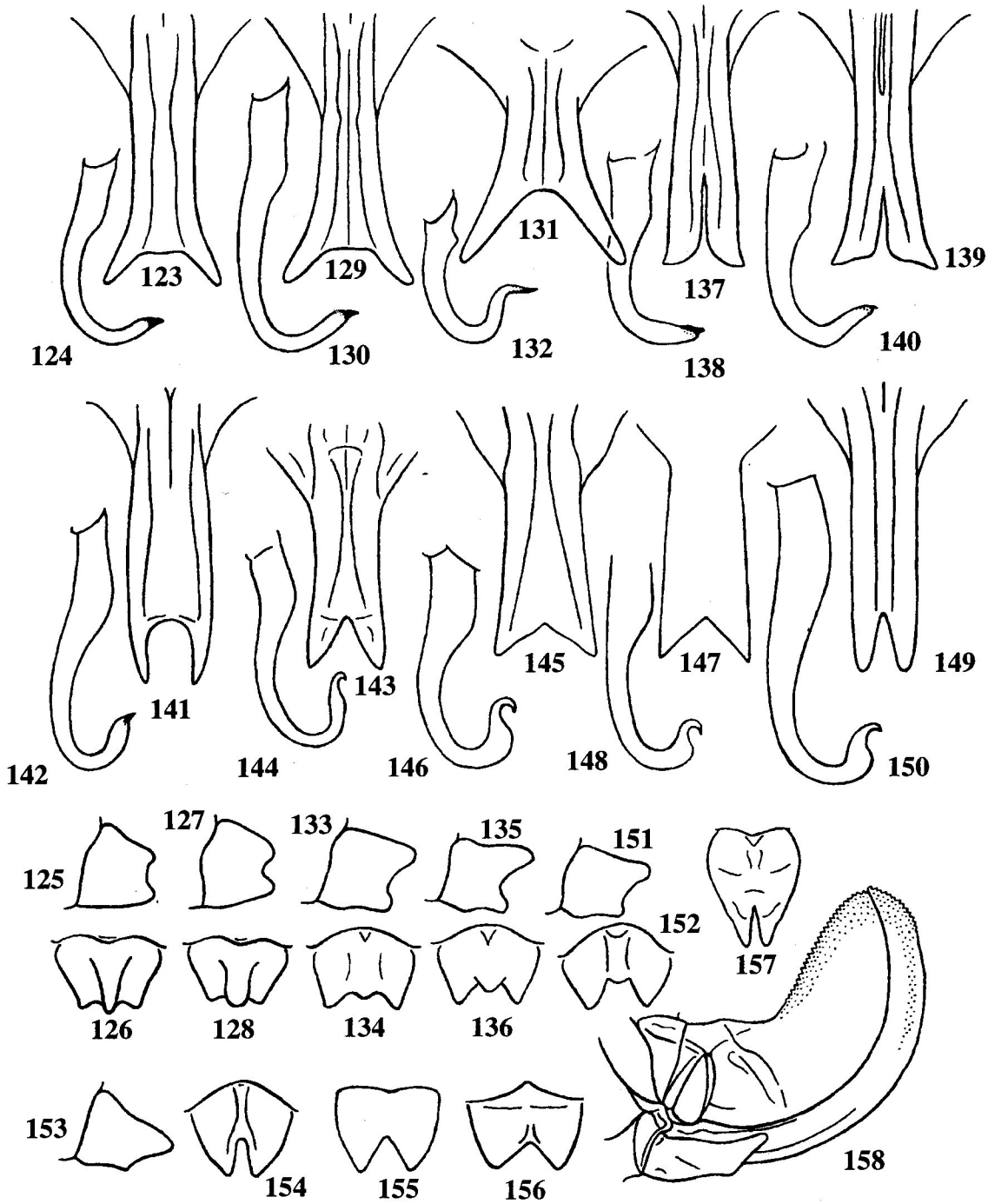
REMARKS. This species having been well described by Bey-Bienko [1957] markedly differs from *M. fallax* and *M. composita* (but its rostrum is similar to that of both these species). Coloration (besides of the dorsal part of male tegmina) yellowish green with sparse or very sparse darkish dots and brownish small spots; the dorsal part of left male tegmen almost fully brown (not dark); the transparent stridulatory area of right tegmen is similar to that of all previous species (Fig. 89). The male genital plate (Fig. 131) is rather short; the male cerci short, strongly curved, S-shaped (Fig. 132); the male genitalia as in Figs 104–106, with a pair of long and narrow characteristic dorsal lateral lobes. The female genital plate with the medium-sized median lobe at the hind edge (Figs 133–136); the ovipositor is similar to that of *M. fallax*.

DISTRIBUTION. China: Yunnan.

Mirollia beybienkoi **sp.n.**
Figs 90, 107–109, 137, 138.

Holotype: ♂, Vietnam, prov. Vinh Phu, Tamdao, 800–900 m, forest, 9–18.XI.1990 (Gorochov) (ZIAS).

DESCRIPTION. MALE (holotype). Yellowish green with dark brown external surfaces of scapes, light brown and spotted antennal flagellum, pair of small brownish longitudinal stripes behind eyes, numerous dark dots and small spots on upper half of pronotum, rather large blackish spot on dorsal part of left tegmen, rather short



Figs 123–158. *Mirollia* spp.: 123–128 — *M. fallax* B.-Bien. (123, 124, holotype); 129, 130 — *M. composita* B.-Bien.; 131–136 — *M. liui* B.-Bien. (131, 132, holotype); 137, 138 — *M. beybienkoi* sp.n.; 139, 140 — *M. quadripunctata* Ingr.; 141, 142 — *M. ranongi* sp.n.; 143, 144 — *M. proxima* sp.n.; 145–148 — *M. carinata* (Haan); 149, 150 — *M. javae* sp.n.; 151, 152 — *M. formosana* Shir.; 153–156 — *M. carinata* (?); 157, 158 — *M. foliolum* sp.n. Distal part of male genital plate from below and slightly behind (123, 129, 131, 137, 139, 141, 143, 145, 147, 149); left male cercus from above (124, 130, 132, 138, 140, 142, 144, 146, 148, 150); female genital plate from side (125, 127, 133, 135, 151, 153) and from below (126, 128, 134, 136, 152, 154–157); ovipositor with genital plate from side (158). 139, 140 — after Ingrisch, 1990; 147, 148, 155 — after Karny, 1926.

Рис. 123–158. *Mirollia* spp.: 123–128 — *M. fallax* B.-Bien. (123, 124, голотип); 129, 130 — *M. composita* B.-Bien.; 131–136 — *M. liui* B.-Bien. (131, 132, голотип); 137, 138 — *M. beybienkoi* sp.n.; 139, 140 — *M. quadripunctata* Ingr.; 141, 142 — *M. ranongi* sp.n.; 143, 144 — *M. proxima* sp.n.; 145–148 — *M. carinata* (Haan); 149, 150 — *M. javae* sp.n.; 151, 152 — *M. formosana* Shir.; 153–156 — *M. carinata* (?); 157, 158 — *M. foliolum* sp.n. Дистальная часть генитальной пластинки самца снизу и слегка сзади (123, 129, 131, 137, 139, 141, 143, 145, 147, 149); левый церк самца сверху (124, 130, 132, 138, 140, 142, 144, 146, 148, 150); генитальная пластинка самки сбоку (125, 127, 133, 135, 151, 153) и снизу (126, 128, 134, 136, 152, 154–157); яйцеклад с генитальной пластинкой сбоку (158). 139, 140 — по Ингришу, 1990; 147, 148, 155 — по Карни, 1926.

transparent stridulatory area of same part of right tegmen, very small dark dots on upper half of lateral part of tegmina, almost fully (except apical part) transparent hind wings, dark and light brown spots on proximal part of fore tibiae. Apex of rostrum distinctly curved (similar to that of previous species). Tegmina narrow, about 4.5 times longer than broad; their venation typical of this genus. Genital plate long, with narrow deep median notch (Fig. 137); cerci not long and comparatively slightly curved (Fig. 138); genitalia very characteristic (Figs 107-109), with not long lobes and short sclerotized spines.

FEMALE unknown.

LENGTH (mm). Body 20; body with wings 32; pronotum 4.3; tegmina 24; hind femora 13.5.

DIAGNOSIS. The species is very similar to *M. quadripunctata* Ingrisch, 1990 in the shape of male genital plate, but it is clearly distinguishing by the short processes of male genitalia. It differs from other known congeners in coloration, the shape of rostrum, tegmina, male genital plate, male cerci, and also some peculiarities of male genitalia (see Figs 87, 95–124, 129–132, 137–150).

ETYMOLOGY. This species is named in memory of the famous orthopterist Prof. G.Ja. Bey-Bienko.

Mirollia ranongi **sp.n.**
Figs 94, 110–112, 141, 142.

Holotype: ♂, Thailand, prov. Ranong, environs of Pakchon, at light, 26.XII.1997 (Grigorenko) (ZIAS).

DESCRIPTION. MALE (holotype). Similar to *M. beybienkoi*, but smaller, brown spots on antennae less distinct (brownish longitudinal stripes behind eyes well developed), pronotum with only 2 pairs of small dark spots on disc, dorsal part of left tegmen slightly narrower and with less dark spot (Fig. 94), tegmina wider (about 4 times longer than broad), genital plate with narrow lateral apical lobules and wide median notch between them (Fig. 141), cerci strongly curved (Fig. 142), genitalia with rather long lobes (lateral dorsal lobes denticulated at apical part; upper medial dorsal lobes wide and undenticulated; lower medial dorsal lobes narrow and also undenticulated) and without large sclerotized spines (Figs 110–112).

FEMALE unknown.

LENGTH (mm). Body 16; body with wings 26; pronotum 4.1; tegmina 19; hind femora 11.

DIAGNOSIS. The differences from *M. beybienkoi* are named above. The male genitalia of the new species are similar to those of *M. composita* (Figs 101–103, 110–112), but they are somewhat shorter and with the undenticulated upper medial dorsal lobes. *M. ranongi* is well distinguished from all known species of the genus by the shape of the male genital plate (Fig. 141).

Mirollia javae **sp.n.**
Figs 92, 120–122, 149, 150.

Holotype: ♂, Java, "Java or.", "12/45" (MIZP).

DESCRIPTION. MALE (holotype). Yellowish green with brown spots on lateral and upper surfaces of scape, brownish rather sparse bands on antennal flagellum, 1 pair of distinct dark brown dots on middle part of proximal half of pronotal disc, wide brownish spot on dorsal part of upper tegmen (Fig. 92), slightly distinct small brown spots and dots on lateral part of tegmina, slight darkenings on fore tibiae near tympana, and sparse reddish brown dots on all femora, middle and hind tibiae, upper half of pronotum, and lateral parts of pterothorax and abdomen. Apex of head rostrum similar to that of previous species. Transparent stridulatory area of lower tegmen short; tegmina rather wide, about 3.6 times longer than broad; their venation typical of this genus. Genital plate long, with ribbon-like distal part, narrow and long lateral apical lobules, deep and not very narrow notch between them (Fig. 149); cerci as in Fig. 150; genitalia with 1 pair of rather heavily sclerotized long upper plates (distal parts of these plates form lateral dorsal lobes) and rather long and well denticulated medial dorsal lobes (1 pair of upper lobes and 1 pair of lower ones) (Figs 120–122).

FEMALE unknown.

LENGTH (mm). Body 16; body with wings 27; pronotum 4; tegmina 19; hind femora 11.5.

DIAGNOSIS. It is similar to *M. carinata*, but differs in the narrower distal part of male genital plate, the longer male cerci, and the division of the medial dorsal lobes of male genitalia into rather long upper and lower lobes. This species is distinguished from all other congeners by the shape of the male genital plate, male cerci, and tegmina.

Mirollia carinata (Haan, 1842)
Figs 93, 117–119, 145, 146.

MATERIAL: ♂, Java, "Java. K.Fruhstorfer S.", "12/45" (MIZP).

REMARKS. This male is almost identical to the specimen pictured by Karny [1926] (for comparison see Figs 145–148). It is similar to the holotype of *M. javae*, but there are some differences in size and coloration (this specimen is slightly larger and with less distinct darkenings, almost uniformly colored antennal flagellum, smaller light brown spot on the dorsal part of upper tegmen) (Fig. 93), the shape of the genital plate (Figs 145, 147), the length of the cerci (Figs 146, 148), and the structure of the genitalia (the medial dorsal lobes without any division into additional lobes and with denticulated middle and upper parts of their inner edge) (Figs 117–119). There are also 3 ♀♀ from Java [2 specimens with labels: "Java or.", "12/45" (MIZP); 1 specimen with labels: "Java", "*Mirollia carinata* De Haan. Brunner v. W. det."(ZIAS)]. They are similar to the above-mentioned male in the general appearance and to the female pictured by Karny [1926] in the absence of any hind median lobule at the hind edge of genital plate (Figs 153–156), but first 2 specimens have wider hind notch of this plate (Fig. 156), and second one has narrower this notch (Fig. 154) and very strongly curved rostrum of the head (Fig. 95). Their conspecificity is problematic.

DISTRIBUTION. Java (other records require re-examination).

Mirollia proxima **sp.n.**
Figs 91, 113–116, 143, 144.

Holotype: ♂, Java, "Java. *Mirollia carinata* De Haan. Brunner v. W. det." (ZIAS).

DESCRIPTION. MALE (holotype). Similar to *M. javae* and especially to *M. carinata*, but almost uniformly yellowish green (with only brownish spots on external surface of scape and first segment of antennal flagellum, slight darkening on fore tibiae near tympana, and almost

indistinct rather small brownish spot on dorsal part of upper tegmen) (Fig. 91), genital plate intermediate between those of 2 above-mentioned species (Fig. 143), cerci with narrower and longer apical part (Fig. 144). Genitalia almost as in *M. carinata*, but with less denticulated distal part of lateral dorsal lobes, less sclerotized their proximal part, and distinctly denticulated lower part of inner edge of medial dorsal lobes (Figs 113–116).

FEMALE unknown.

LENGTH (mm). Body 16; body with wings 28; pronotum 4.8; tegmina 21; hind femora 11.

DIAGNOSIS. The differences from *M. carinata* and *M. javae* are named above. It differs from all other congeners in characteristic genital plate, cerci, and genitalia of male.

Mirollia cerciata Hebard, 1923
Fig. 96.

MATERIAL: ♀, Thailand, prov. Surat Thani, 40 km WSW of Phanom, environs of nat. park Khao Sok, forest, 20–29.VII.1996 (Gorochov) (ZIAS); ♀, Sumatra, "Sumatra W.K. Kota Baru. 1913.7.IV. O.John" (ZIAS).

REMARKS. This species is well described by Hebard [1923] from Kalimantan. *M. cerciata* is clearly distinguishing from all other species of the genus by the very characteristic shape of the head rostrum (Fig. 96).

DISTRIBUTION. Kalimantan; Thailand, Sumatra (new records).

Mirollia foliolum **sp.n.**
Figs 97, 157, 158.

Holotype: ♀, Vietnam, prov. Gia Lai, 40 km N of Kannack, Tram Lap, forest, 21.XI.1988 (Gorochov) (ZIAS).

DESCRIPTION. FEMALE (holotype). Yellowish green with some dark brown small spots on base of antennal flagellum, 2 pairs distinct dark dots on disc of pronotum (before centre of disc and near hind edge), very small darkish dots on upper half of tegmina, almost fully (except apical part) transparent hind wings, darkened spots on proximal part of fore tibiae. Apex of rostrum very slightly curved (Fig. 97). Tegmina rather wide, about 3.8 times longer than broad; their venation typical for the genus. Genital plate long and without median lobe of hind edge (Figs 157, 158); ovipositor as in Fig. 158.

MALE unknown.

LENGTH (mm). Body 18; body with wings 31; pronotum 4.3; tegmina 23; hind femora 12.8; ovipositor 5.5.

DIAGNOSIS. The new species is similar to *M. carinata*, *M. javae*, *M. proxima*, and *M. cerciata* in the shape of tegmina, but differs in longer female genital plate (see Figs 157, 158) and very slightly curved apex of rostrum (Fig. 97). It may be distinguished from all other congeners by the coloration, the shape of rostrum, tegmina, and female genital plate (Figs 125–128, 133–136, 151–158).

References

Bey-Bienko G.Ja., 1957. [Tettigonioidea (Orthoptera) of Yunnan. Results of Chinese-Soviet zoological-botanical expeditions to South-Western China 1955–1956] // Entomol. Obozr. Vol.36. No.2. 401–417 [in Russian, with English summary].

Bey-Bienko G.Ja. 1962. [New or less-known Tettigonioidea (Orthoptera) from Szechuan and Yunnan. Results of Chinese-Soviet zoological-botanical expeditions to South-Western China 1955–1957] // Trudy. Zool. Inst. AN SSSR. Vol.30. P.110–138 [in Russian].

Hebard M. 1923. Studies on Malayan, Melanesian and Australian Tettigoniidae (Orthoptera) // Proc. Acad. Nat. Sci. Philad. Vol.74 (1922). P.121–299, pl. 11–22.

Ingrisch S. 1990. Zur Laubheuschrecken-Fauna von Thailand (Insecta: Saltatoria: Tettigoniidae) // Senckenbergiana Biol. Bd.70 (1989). S.89–138.

Ingrisch S. 1994. Drei neue Arten der Gattung *Stictophaula* Hebard 1922 aus Thailand (Ensifera: Phaneropteridae) // Entomol. Z. Bd.104. H.13. S.245–264.

Karny H.H. 1926. Beiträge zur Malayischen Orthopterenfauna. XIII. Die Scaphurinen des Buitenzorger Museums // Treubia. Vol.9. No.1–3. S.12–151, Taf. 3.