

Taxonomy of Podoscirtinae (Orthoptera: Gryllidae). Part 6: Indo-Malayan Aphonoidini

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The majority of Indo-Malayan species of the tribe Aphonoidini belonging to 9 genera are considered. Brief characteristics of this tribe and many of its taxa described previously (including revision of type material of several species, information about possible systematic position of some enigmatic forms, and new data on distribution) are given. Six new genera, 47 new species, 2 new subspecies, and previously unknown female and male of *Aphonoides medvedevi* Gorochov, 1990 and *Mistshenkoana caudata* (Bey-Bienko, 1966), respectively, are described.

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This is the sixth part in the series of papers on Podoscirtinae; it contains a partial review of Aphonoidini from the Indo-Malayan region. Five previous papers (Gorochov, 2002, 2003, 2004, 2005, 2006) contain data on Old World Podoscirtini including an introduction about the male genitalia and a chapter about the Podoscirtini geography.

The material considered here is deposited at the following institutions: Zoological Institute, Russian Academy of Sciences, St.Petersburg (ZIAS); Natural History Museum, London (BMNH); Museum für Naturkunde der Humboldt-Universität, Berlin (MNHU); Museum and Institute of Zoology, Polish Academy of Sciences, Warszawa (MIZP).

Tribe **Aphonoidini** Gorochov, 1986

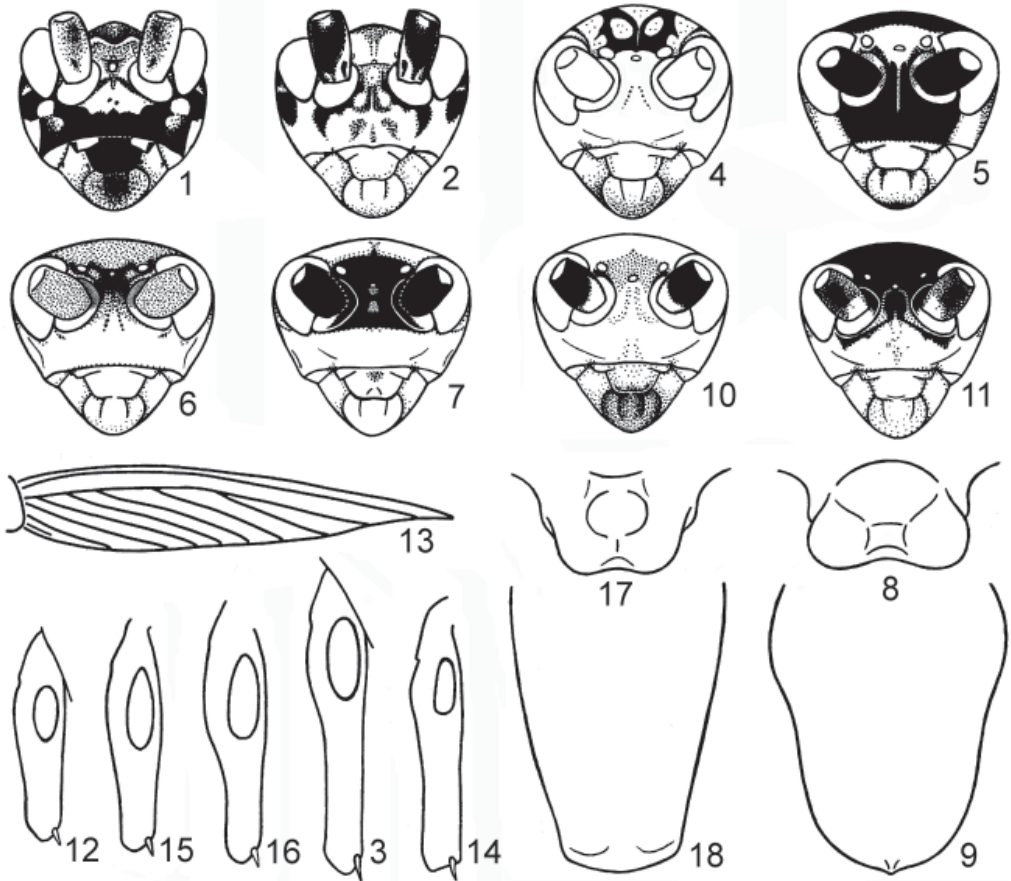
This tribe is distributed only in Indo-Malayan and Australo-Oceanian regions. It includes numerous rather small crickets lacking male stridulatory apparatus and living mainly on leaves of trees and bushes in tropical forests. Aphonoidini are clearly distinguished from all other tribes of this subfamily by the characteristically modified genitalia in males. The differences between the holophyletic Aphonoidini and paraphyletic Podoscirtini are given in the first paper of this series (Gorochov, 2002, p. 306). Here, it is useful to mention only that for practical purposes one can distinguish these tribes from each other by the position of the spermatophore in the male abdomen: in Podoscirtini, the spermatophore ampulla is situated in the proximal part of the genital chamber, and the spermatophore tube, in

its distal part (see Gorochov, 2002: Figs I: 10-13); in Aphonoidini, the spermatophore ampulla is situated in the distal part of the genital chamber (the ampulla is often visible in living and dry specimens near the apex of the genital plate), and the base of spermatophore tube, in its proximal part (the rest of this tube is strongly curved and directed backwards; see Gorochov, 2002: Figs I: 14, 15). Such a position of spermatophore in Aphonoidini results from mobility of the genital rami: genitalia in the rest position have rami with their apices directed forward, as in Podoscirtini (Figs II: 2-4; III: 1-3; IV: 1-3, 5-7; VI: 1-3); but genitalia with the spermatophore formed have rami with apices directed almost downwards or even backwards (Figs V: 1-3; VI: 6). The latter positions of rami explain the shift of valves forming the spermatophore ampulla in the distal part of the genital chamber (partly behind the apex of epiphallus).

Genus **Aphonoides** Chopard, 1940

Type species: *Gryllus (Eneoptera) punctatus* Haan, 1842 (Sulawesi).

Note. This genus was proposed by Chopard (1940) for Indo-Malayan representatives of Podoscirtinae similar to the American *Aphonomorphus* Rehn. The type species was designated by the editors (not by Chopard), as in 1940, it was "impossible to communicate with the author" (Chopard, 1940, p. 204). It was not very apt decision, as the generic classification of Aphonoidini is based on the male genital structures, which are unknown for *A. punctatus* up to now. Moreover, this species was recorded from very different localities of Indo-Malayan region and from



Figs I (1-18). *Aphonoides*, *Misthenkoana*, and *Zamunda*. 1, *A. changi* sp. n.; 2, 3, *A. aequatori* sp. n.; 4, *M. padangi* sp. n. (holotype); 5, *A. sarawaki* sp. n. (holotype); 6, *A. tawai* sp. n. (holotype); 7-9, *Z. fuscirostris* (Chop.); 10, *Z. humeralis* sp. n. (holotype); 11, 12, *A. gialai* sp. n. (holotype); 13, 14, *A. acutus* Ingr. (Ingrisch, 1997); 15, *A. medvedevi medvedevi* Gor. (holotype); 16, *A. karnyi* Chop. (lectotype); 17, 18, *A. peraki* sp. n. (holotype). Head in front (1, 2, 4-7, 10, 11); inner surface of fore tibia (3, 12, 14-16); male anal plate from above (8, 17); male genital plate from below (9, 18); lateral lobe of tegmen (13).

New Guinea (Chopard, 1969, p. 381), but most of these records are questionable judging from our recent knowledge of species distribution in Aphonoidini. Here, this genus is understood as *Aphonoides* sensu Gorochov (interpretation based on *A. karnyi* Chop., one of species included by Chopard in *Aphonoides* in the original description; Gorochov, 1990).

Aphonoides is mainly characterized by the following genital characters of male: hind epiphallid lobes short, not hooked, and undivided; ectoparameres with narrow, more or less long proximal part and lobe-like distal part having comparatively small and rounded folds at its base; spermatophore with rounded (not very elongate) ampulla (Figs II: 3-6; III-XII). It is useful to add that in all known species belonging or possibly

belonging to this genus, the body is slender, rostrum of head between antennal cavities somewhat narrower than scape and with more or less truncate apex, inner tympanum open (Figs I: 3, 12, 14-16), but outer one obliterated (there is only a small, weakly distinct concavity), wings long (hind wings distinctly longer than tegmina), tegminal *Sc* with several normal branches (Fig. I: 13), anal and genital plates of male more or less as in Figs I: 17, 18, and apex of ovipositor drilling (more or less rounded and with large teeth on hind and ventral surfaces; Fig. II: 7). The tegmina are with crossveins not very light (excepting some very variegated forms) and without darkish spots around crossveins (sometimes such spots are present, but they are situated in both proximal and distal parts of tegmina).

Included species (additional to the type species). *Aphonomorphus japonicus* Shiraki, 1930 (Japan), *Aphonoides karnyi* Chopard, 1940 (Borneo), *A. nicobarica* Bhowmik, 1970 (Nicobar Islands), *A. medvedevi* Gorochov, 1985 (Vietnam), *A. acutus* Ingrisch, 1997 (Thailand), *A. rufescens* Ichikawa, 2001 (Japan), *A. phetchaburi* sp. n., *A. changi* sp. n., *A. aequatori* sp. n., *A. peraki* sp. n., *A. siveci* sp. n., *A. kerzhneri* sp. n., *A. sabahi* sp. n., *A. popovi* sp. n., *A. berezini* sp. n., *A. sarawaki* sp. n., *A. hollowayi* sp. n., *A. taiwai* sp. n., *A. dohrni* sp. n., and possibly *Gryllus (Eneoptera) cinereus* Haan, 1842 (from S. Malacca to New Guinea?), *Aphonoides albonotatus* Chopard, 1954 (Sumba I.), *A. griseovariegatus* Chopard, 1969 (S. Malacca), *A. wuyiensis* Yin, 2001 (S. China), *A. ? siami* sp. n., *A. ? khaoyai* sp. n., and *A. ? gialai* sp. n.

Other Indo-Malayan species included in this genus by Otte (1994) belong (or possibly belong) to *Mistshenkoana* Gor. (*Aphonus taciturnus* Sauss., *Aphonomorphus gracilis* Chop., *Podoscirtus angustifrons* Chop., *Aphonoides bilineatus* Chop., *A. chopardi* B.-Bien., *A. caudatus* B.-Bien., *A. tessellatus* Chop.) and new genera (*A. fuscirostris* Chop., *A. bipunctatus* Chop., *A. griseipennis* Chop.), or their generic position is unclear (*Aphonomorphus pallipes* Chop., *Aphonoides pubescens* Chop.). African and American species from the list by Otte (1994) are probably representatives of other tribes (*Aphonomorphus dimidiatus* Bol., *Aphonus ocellaris* Sauss., *Aphonoides bicolor* Chop.). Species from New Guinea and nearest islands as well as from Australia and the rest of Oceania will be considered in the next paper, as they are in need of generic revision, excepting a single species transferred to Podoscirtini in one of previous papers [Gorochov, 2003: *Hemitrella ragei* (Bhowm.)].

***Aphonoides medvedevi medvedevi* Gorochov, 1985**

(Figs I: 15; II: 1-4)

Holotype. ♂, N. Vietnam, prov. Ninh Binh, nat. reserve Cuc Phuong, 23.IV.1975, L. Medvedev (ZIAS).

Other material examined. N. Vietnam: 1 ♀, same data as for holotype, but 7-9.V.2002, S. Belokobylskij (ZIAS); 1 ♂ (paratype), prov. Bachthai, 25-30 km NE of town Thai Nguyen, 2.XI.1976, L. Medvedev (ZIAS); 1 ♂, 2 ♀, prov. Hoa Binh, distr. Ky Son, secondary forest near vill. Cao Phong, 24-29.X.1990, A. Gorochov (ZIAS); 1 ♂, 1 ♀, prov. Hoa Binh, distr. Da Bak, secondary forest near vill. Tu Ly, 16-23.X.1990, A. Gorochov (ZIAS); 1 ♀, prov. Hoa Binh, distr. Mao Chau, primary forest near town Mai Chau, 30.X-4.XI.1990, A. Gorochov (ZIAS); 2 ♂, 1 ♀, prov. Hoa Binh, distr. Yen Thuy, vill. Lac Thinh, 5-6.V.2002, S. Belokobylskij (ZIAS); 2 ♂, 2 ♀, prov. Vinh Phu, primary forest near vill. Tam Dao, 800-900 m, 18.XI.1993 and 1-11.VI.1995, A. Gorochov (ZIAS). S. China: 1 ♂, Yunnan? (ZIAS).

Description of female (nov.). Head without distinct dorsal concavity; ocelli distinctly shorter than areas between them; coloration of head greyish with dark grey longitudinal stripes on lateral surfaces of head (Fig. II: 1), ventral and lateral parts of scapes, and small marks under rostral apex and antennal cavities, light (almost yellowish) lower part of head (excepting small darkenings on distal part of maxillary palpi) and sparse narrow rings on antennal flagellum. Pronotum greyish with dark grey lateral lobes (excepting light stripe along their ventral edge) and a pair of small dark spots before middle of pronotal disc (Fig. II: 1). Fore tibiae as in Fig. I: 15; hind femora not very narrow (as in Fig. II: 8); legs light greyish with very small dark spots, excepting hind tibiae and tarsi, which are dark with more or less light dorsal surface of tibiae including tibial spines (some of these spines with darkish spot) and sometimes with slightly lighter narrow longitudinal stripe along ventral surface of tibiae and basitarsi. Tegminal dorsal part light greyish with comparatively sparse small darkish spots; tegminal lateral part more or less weakly darkened and provided with light band along ventral edge and often rather dark band along dorsal edge (in latter case crossveins near dorsal edge lighter). Abdomen more or less brownish grey, with spotted cerci; ovipositor distinctly shorter than hind femur.

Note. Male of this subspecies is very similar to female in the general appearance; its genitalia are shown in Figs II: 2-4. It is not improbable that *A. wuyiensis* described from S. China without study of its male genitalia (Yin & Zhang, 2001: Fujian) is a synonym of this rather widely distributed cricket (only this representative of *Aphonoides* is known in different provinces of N. Vietnam).

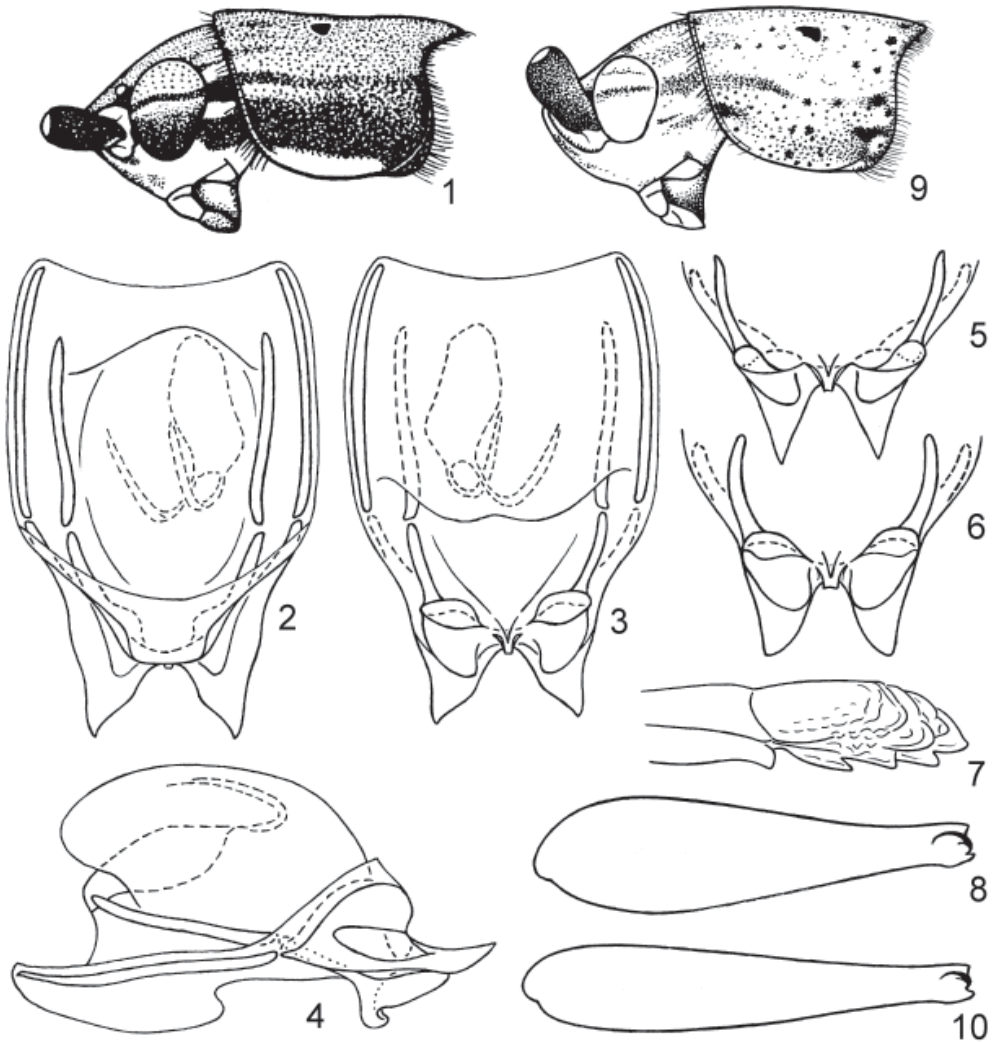
Length (in mm). Body: ♂ 10.5-12, ♀ 11-14; body with wings: ♂ 16-19, ♀ 17.5-20.5; pronotum: ♂ 2-2.5, ♀ 2.2-2.6; tegmina: ♂ 11-13.5, ♀ 12-13.5; hind femora: ♂ 7.5-9.2, ♀ 7.8-9.5; ovipositor 5.5-7.

***Aphonoides medvedevi alius* subsp. n.**
(Figs II: 5-8)

Holotype. ♂, S. Vietnam, prov. Gia Lai, 20 km N of town Kannack, primary forest near vill. Buon Luoi, 700-800 m, 1-10.V.1995, A. Gorochov (ZIAS).

Paratypes. S. Vietnam: 4 ♂, 2 ♀, same data as for holotype, but 17-20.XI.1988, 3-11.XI.1993, and 1-10.V.1995, A. Gorochov (ZIAS); 1 ♀, prov. Gia Lai, 40 km N of town Kannack, primary forest near vill. Tram Lap, 800-900 m, 20-24.IV.1995, A. Gorochov (ZIAS). E. Thailand: 3 ♂, 2 ♀, prov. Nakhon Ratchasima, near Nat. park Khao Yai, primary forest, 500-1000 m, 26.X-4.XI.2000, A. Gorochov & L. Anisutkin (ZIAS).

Description. Male (holotype). Very similar to nominotypical subspecies, but distinguished by



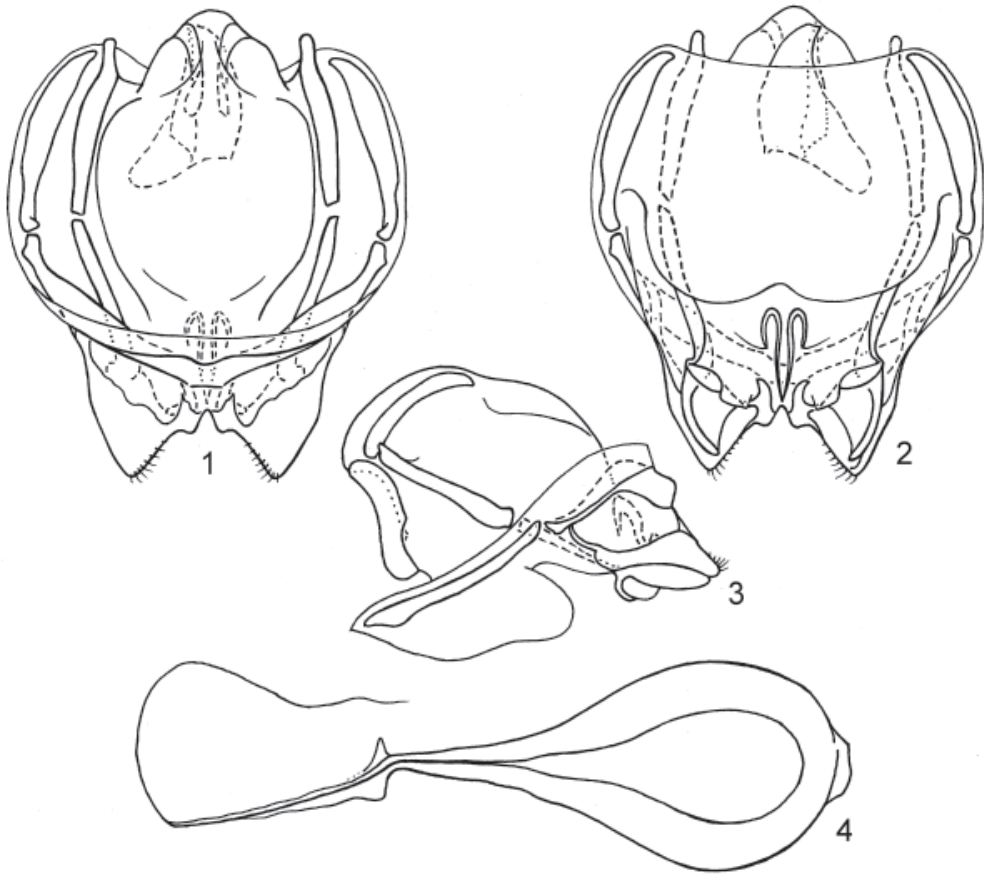
Figs II (1-10). *Aphonoides*. 1-4, *A. medvedevi medvedevi* Gor. (holotype; Gorochov, 1985); 5-8, *A. medvedevi alius* subsp. n. (5, holotype); 9, 10, *A. phetchaburi* sp. n. Head and pronotum from side (1, 9); male genitalia from above (2), from below (3, 5, 6), and from side (4) (5, 6, without rami, endoparameres, spermatophore sac, and valves); apex of ovipositor from side (7); hind femur from side (8, 10).

following characters of coloration: dark parts of scapes and pronotal lateral lobes slightly lighter; dark bands behind eyes fused with each other; hind tibiae light greyish with three large darkish spots on dorsal half (including proximal parts of nearest spines) and three similar spots on ventral surface; tegmina with somewhat larger darkish spots on dorsal part (total area of darkish spots in this part almost equal to that of light spaces) and dark band (with lighter crossveins) along dorsal edge of lateral part. Male genitalia with narrower hind lobes of epiphallus and shorter

distal lobe of ectoparameres as compared with nominotypical subspecies (Fig. II: 5).

Variation. Coloration sometimes slightly lighter or darker; in latter case, pronotal lateral lobes virtually without light lower stripe. Epiphallic hind lobes and ectoparameres varied from those shown in Fig. II: 5 to those shown in Fig. II: 6 (including variant similar to that of nominotypical subspecies).

Female. Similar to male and distinguished from female of nominotypical subspecies by same characters of coloration as male and slightly shorter ovipositor.



Figs III (1-4). *Aphonoides changi* sp. n., ♂. **1**, genitalia from above; **2**, same from below; **3**, same from side; **4**, spermatophore from side.

Length (in mm). Body: ♂ 10-12, ♀ 11-13; body with wings: ♂ 16-18, ♀ 18-20; pronotum: ♂ 2-2.2, ♀ 2.2-2.5; tegmina: ♂ 11.5-12.5, ♀ 12-13; hind femora: ♂ 7.5-8, ♀ 7.8-8.4; ovipositor 5-5.4.

***Aphonoides phetchaburi* sp. n.**
(Figs II: 9, 10)

Holotype. ♀, **W. Thailand**, prov. Phetchaburi (N. Malacca), 60-70 km SW of town Phetchaburi, env. of Nat. park Kaeng Krachan near border with Myanmar, primary forest, 800 m, 1-3.VIII.1996, A. Gorochov (ZIAS).

Description. *Female* (holotype). Similar to *A. medvedevi*, but distinguished from it by following characters: general coloration slightly lighter, light greyish with slight longitudinal darkenings on hind part of vertex and behind eyes, on median and fore parts of pronotal disc, and on lateral pronotal lobes (Fig. II: 9); middle legs with larger dark spots fused with each other on mid-

dle part of femora and distal part of tibiae; hind tibiae similar to those of *A. medvedevi alius* in coloration, but with rather narrow dark stripe along ventral surface; hind femora distinctly narrower (Fig. II: 10) and hind tibiae with smaller spines (their length not greater than diameter of this tibia; in *A. medvedevi*, their length clearly greater than this diameter); coloration of tegmina almost as in *A. medvedevi alius*, but base of lateral tegminal part darkish and with whitish crossveins near dorsal edge of this part encircled by rather small light areas; length of ovipositor almost as in *A. medvedevi medvedevi*.

Male unknown.

Length (in mm). Body 10.5; body with wings 18.5; pronotum 2.1; tegmina 12.3; hind femora 8.4; ovipositor 6.2.

Comparison. The new species differs from *A. medvedevi* in the above-mentioned characters. From all congeners, it is distinguished by the

same characters as *A. medvedevi* and by the narrow hind femora [from *A. acutus*, other Thailan-dian species, it is additionally distinguished by the inner tympanum similar to that in Fig. I: 15, distinctly larger than in *A. acutus* (Fig. I: 14)].

Aphonoides changi sp. n.
(Figs I: 1; III: 1-4)

Holotype. ♂, **E. Thailand**, prov. Trat, Chang I. in Siam bay, primary forest on low mountains near sea, 5-20.XI.2000, A. Gorochov & L. Anisytukin (ZIAS).

Description. *Male* (holotype). Head with large rounded concavity between eyes and rostral apex; ocelli distinctly shorter than areas between them; dorsal part of head grey with light sinuous transverse line between eyes; coloration of frontal part of head consisting of black and whitish yellow spots (Fig. III: 1); scapes with darkish and lightish spots; antennal flagellum brownish with numerous whitish rings. Pronotal disc grey with a pair of rather large light spots, each of them having slight brownish darkening at centre; pronotal lateral lobes blackish with rather wide light band along ventral edge and a few lightish spots on hind part. Legs light with numerous small dark spots; these spots fused with each other near apex of middle and hind femora as well as near base of middle tibiae; hind tibiae with large dark spots on dorsal, inner, and outer surfaces; fore tibiae very similar to those shown in Fig. I: 3. Dorsal tegminal part greyish with slightly darker veins and darkish spot at centre of almost each cell; four large cells near lateral edge of this part darkened almost completely; lateral tegminal part light with slightly darker veins and very dark membranes near dorsal edge of this part (excepting longitudinal whitish spot in distal part of this darkened area) and between bases of proximal branches of *Sc*. Abdomen light beneath, with spotted anal plate and cerci; genitalia with characteristic shape of hind epiphallic notch; hind epiphallic lobes shorter than in *A. medvedevi*; proximal part of ectoparameres longer than in *A. medvedevi*; their distal part with rather complicated folds at base (Figs III: 1-3); spermatophore as in Fig. III: 4.

Female unknown.

Length (in mm). Body 13; body with wings 20; pronotum 2.3; tegmina 12.8; hind femora 9.7.

Comparison. The new species is more or less similar to some species of the “*biangri* group” from Australia (Otte & Alexander, 1983: Figs 278: C-F) and very similar to *A. ?cinereus* (see below) in the coloration and external morphology, but it is clearly distinguished from all these species by the different shape of epiphallus and distal part of ectoparameres (for comparison, with possible representatives of the latter species see Figs III: 1-3 and IV: 1-3, 5-7).

Aphonoides ?cinereus (Haan, 1842)
(Figs IV: 1-7)

Material examined. **Malaysia**: 1 ♂, Penang I. between Malacca and Sumatra, “Penang Hills, 1800-2500 ft.”, S.S. Flower (BMNH); 1 ♂, Sabah (N. Borneo), “Tawai Plat. 1300 ft., 8 m, S. Telupid”, 8.IX.1977 (BMNH).

Note. *A. cinereus* was described by Haan (1842-1844) from several specimens collected in New Guinea, Sulawesi, and Java. Chopard (1969) indicated this species also for Malacca. He gave a redescription of this species and noted that “this species seems as widely distributed... in the Oriental region”. My preliminary determination of this species is based on Chopard’s redescription. Its male genitalia were unknown, and very probably the syntypes belonged to different species similar to each other in general appearance.

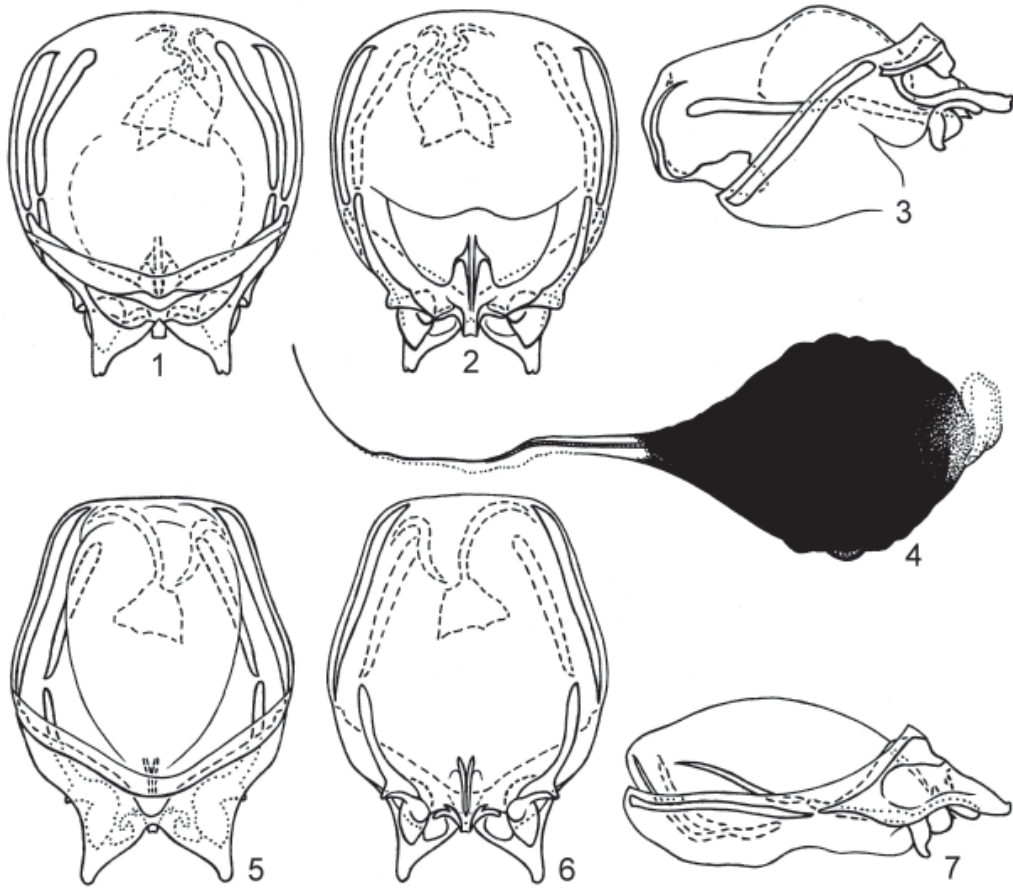
The specimens studied here are very similar to *A. changi* in the shape of body parts and coloration. There are only some small differences: in *A. ?cinereus*, the labrum and dorsal part of head are somewhat lighter, median part of pronotal disc light greyish, and dorsal part of tegmina with distinct whitish spots around large darkened areas along its lateral edge. The main differences between these specimens and *A. changi* are in the shape of the epiphallus and ectoparameres (for comparison, see Figs III: 1-3 and IV: 1-3, 5-7). There are also small differences in the shape of these structures between specimens from Penang I. and Borneo, but it is impossible to establish subspecies status for them on the base of only two specimens.

Length (in mm). Body 11.5-12.5; body with wings 19.5-21; pronotum 2.2-2.3; tegmina 13.4-13.7; hind femora 8.6-9.2.

Aphonoides aequatori sp. n.
(Figs I: 2, 3)

Holotype. ♀, **Indonesia**, W. Sumatra, 20 km E of town Sasak, primary forest near Nat. park Harau Valley, equator, 600 m, 24-26.XI.1999, A. Gorochov (ZIAS).

Description. *Female* (holotype). Similar to *A. changi* in shape of body parts and coloration, but distinguished by frontal part of head distinctly lighter (Fig. I: 2), dorsal part of head yellowish with indistinct darkish spots on hind part of vertex and two dark bands behind eyes, darkened parts of antennae almost blackish, pronotum with blackish lateral lobes (provided with small light spots near fore and hind edges) and characteristic coloration of disc (lateral parts darkened, median part and a pair of rings near middle of disc light; these rings environing rather large black spots), legs with more distinct dark spots (most spines of hind tibiae blackish), tegmina dark brown with slightly lighter longitudinal veins and very light crossveins, and ventral part



Figs IV (1-7). *Aphonoides ?cinereus* (Haan), ♂. 1-4, specimen from Borneo; 5-7, specimen from Penang I. Genitalia from above (1, 5), from below (2, 6), and from side (3, 7); spermatophore (without distal part of tube and spermatophylax) from side (4).

of abdomen lightish with dark genital plate. Ovipositor distinctly shorter than hind femur.

Male unknown.

Length (in mm). Body 11; body with wings 20; pronotum 2.3; tegmina 13.5; hind femora 9.7; ovipositor 6.8.

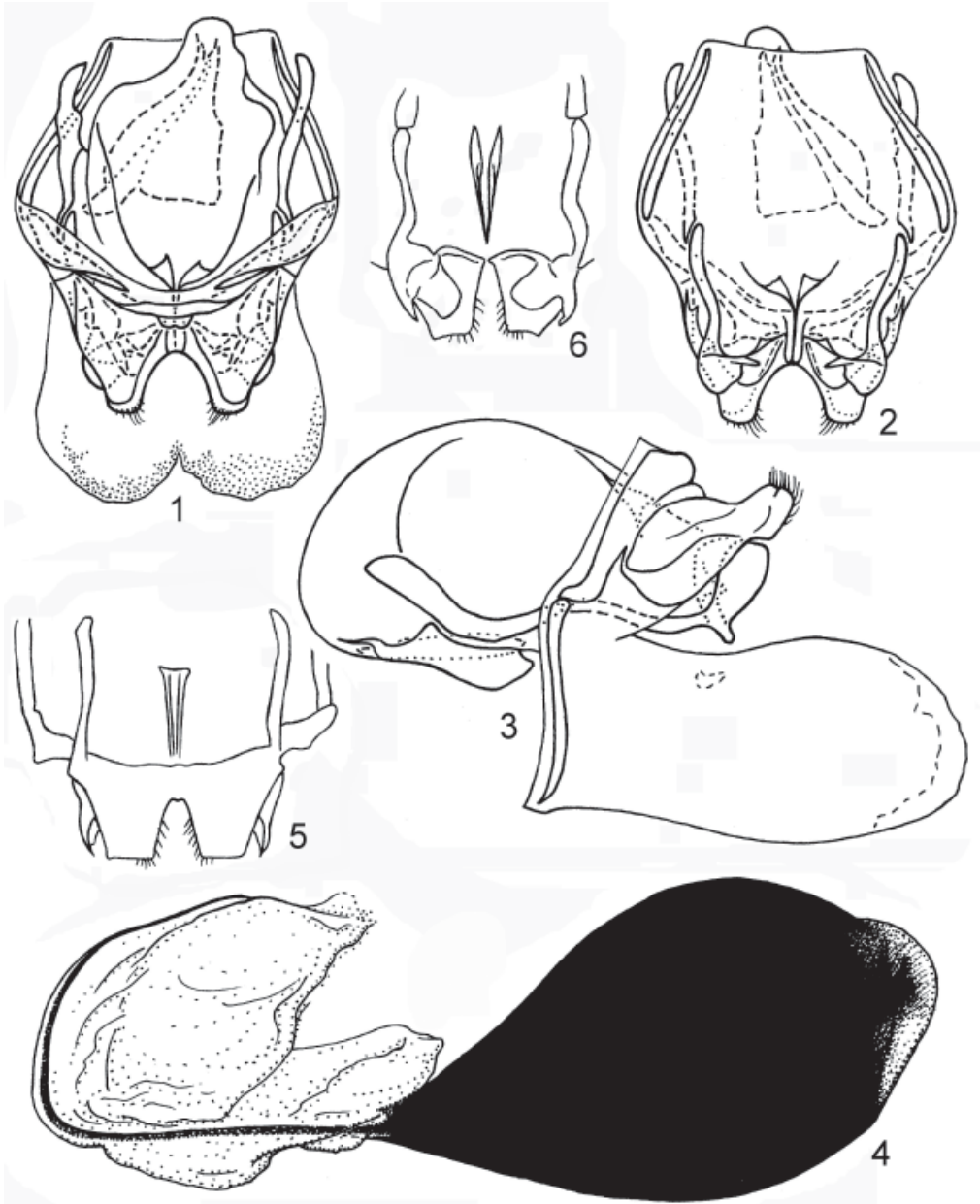
Comparison. The new species is similar to *A. changi* and *A. ?cinereus*, but is clearly distinguished from them by the characteristic coloration of head (for comparison, see Figs I: 1 and 2), a pair of rather large black spots at the middle of pronotal disc, and the almost completely dark pronotal lateral lobes and tegminal membranes. *A. aequatori* is somewhat similar also to the Australian *A. biangri* Otte & Alex. in the coloration of frons, but differs in the absence of distinct dark spot near clypeus and the almost completely dark lateral pronotal lobes.

***Aphonoides peraki* sp. n.**
(Figs I: 17, 18; V: 1-4)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), “Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E”, 8-10.IV.1994, I. Sivec (ZIAS).

Paratypes. 11 ♂, same data as for holotype, but 4-7.IV.1994, VIII-XII.1993, and IV-VI.1994 (2 latter labels state that specimens are collected by Rothamsted light traps) (ZIAS).

Description. *Male* (holotype). Coloration uniformly light brown, but with several darkish dots along fore edge of pronotum, a pair of slightly lighter spots on pronotal disc (near its middle) having small brown spot at their centre, sparse and almost indistinct dots on legs, darkened proximal half of spines of hind tibiae, hardly darker (compared with cell membranes) tegminal cross-veins, and dark spots on anal plate. Head with-



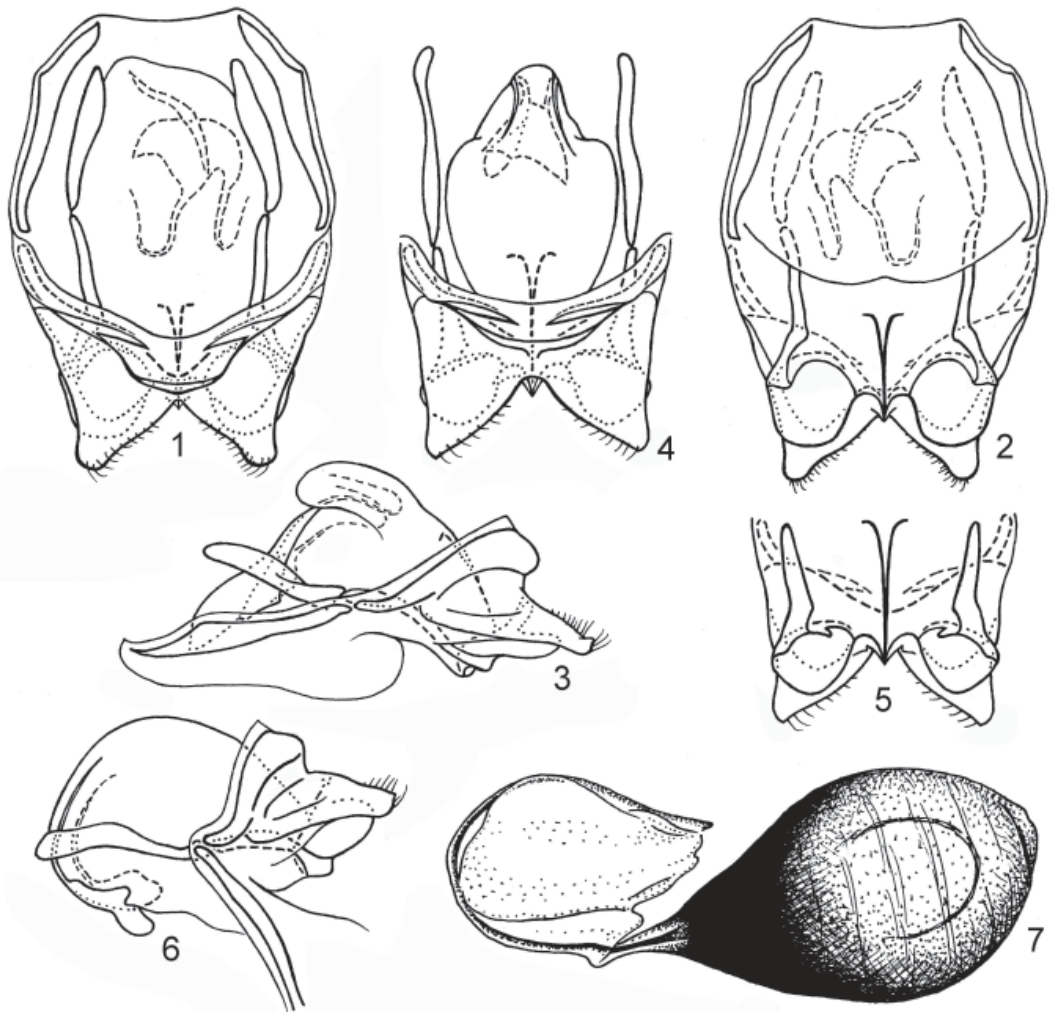
Figs V (1-6). *Aphonoides*, ♂. 1-4, *A. peraki* sp. n. (holotype); 5, 6, *A. japonicus* (Shir.) (Ichikawa et al., 2000). Genitalia from above (1, 5), from below (2, 6), and from side (3) (2, without valves; 5, 6, without spermatophore sac, valves, rami or their parts, and endoparameres or their parts); spermatophore from side (4).

out distinct dorsal concavity; ocelli distinctly shorter than areas between them. Fore tibiae intermediate between those in Figs I: 3 and 16. Genitalia with epiphallus as in Figs V: 1-3; ectoparameres having characteristic spine-like medial process at base of their distal part (Figs V: 2, 3), and valves with slightly sclerotized distal ar-

eas (Figs V: 1, 3); spermatophore as in Fig. V: 4.

Variation. Some paratypes with more distinct small brown spots on ventral outer keel of hind femora, slight darkish dots on lateral pronotal lobes, and more developed sclerotized areas of genital valves.

Female unknown.



Figs VI (1-7). *Aphonoides siveci* sp. n., ♂. 1-3, holotype; 4-7, paratype. Genitalia from above (1, 4), from below (2, 5), and from side (3, 6) (4, without rami; 5, without rami, endoparameres, spermatophore sac, and valves); spermatophore from side (7).

Length (in mm). Body 10.5-12.5; body with wings 18-20; pronotum 2.2-2.6; tegmina 12-14; hind femora 8-9.

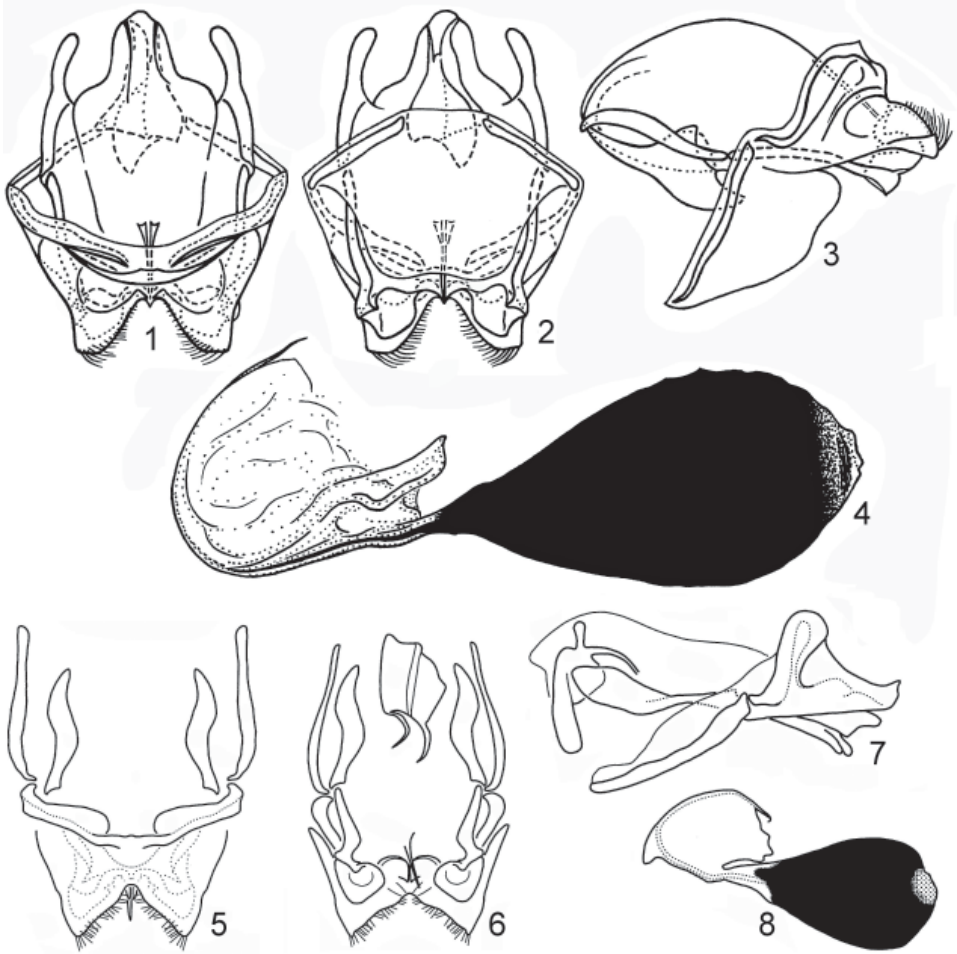
Comparison. The new species is similar to *A. japonicus*, *A. karnyi*, and *A. rufescens* in the almost uniform lightish coloration, but clearly differs from them in the structure of the male genitalia, especially in the presence of spine-like medial process of ectoparameres (for comparison, see Figs V: 1-3; IX: 1-3; XI: 4-6; V: 5, 6). From *Aphonoides pubescens* with unclear generic position, it is distinguished by the absence of distinct differences between the coloration of legs and of other parts of body.

***Aphonoides siveci* sp. n.**
(Figs VI: 1-7)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E", 24-28.III.1994, I. Sivec (ZIAS).

Paratypes. 1 ♂, 2 ♀, same data as for holotype, but 2 specimens collected IV-VI.1994 and by Rothamsted light trap (ZIAS).

Description. Male (holotype). Coloration uniformly very light brown, but with a pair of small darkish spots on middle part of pronotal disc, narrow interrupted brown stripe along dorso-ventral edge of fore tibiae, less distinct such stripes along both ventral keels of fore femora,



Figs VII (1-8). *Aphonoides*, ♂. 1-4, *A. kerzhneri* sp. n.; 5-8, *A. acutus* Ingr. (Ingrisch, 1997). Genitalia from above (1, 5), from below (2, 6), and from side (3, 7) (5, without spermatophore sac; 6, without valves); spermatophore from side (4, 8).

slight darkish longitudinal line on outer surface of hind femora, almost indistinct small darkish spots on middle legs and along distal part of ventral keel of hind femora, and slightly darkened anal plate (tegmina almost yellowish with hardly darker venation). Head without distinct dorsal concavity; lateral ocelli elongate (their length almost equal to distance between lateral and median ocelli). Fore tibiae more or less similar to those in Fig. I: 3. Genitalia as in Figs VI: 1-3.

Variation. Paratype without darkenings on fore femora and on middle and hind legs; its genitalia with slightly wider hind epiphallic notch, hardly higher distal part of hind epiphallic lobes, and distinctly shorter lobe-like part of ectoparameres (Figs VI: 4-6).

Female. Similar to male paratype, but without darkenings on fore tibiae. Ovipositor distinctly shorter than hind femur.

Length (in mm). Body: ♂ 10-10.5, ♀ 10-11; body with wings: ♂ 17-18, ♀ 17.5-18; pronotum: ♂ 2, ♀ 2-2.1; tegmina: ♂ 11.5-12, ♀ 12.2-12.5; hind femora: ♂ 7.5-7.7, ♀ 7.3; ovipositor 5.2-5.4.

Comparison. The new species is similar to *A. peraki*, *A. japonicus*, *A. rufescens*, and *A. karnyi* in the uniform coloration, but clearly distinguished from them by the shape of the ectoparameral distal part (for comparison, see Figs V: 2, 6; VI: 2, 5; IX: 2; XI: 5). From other similar species, it differs in the same characters as *A. peraki*.

Etymology. The new species is named after its collector.

Aphonoides kerzhneri sp. n.
(Figs VII: 1-4)

Holotype. ♂, **Indonesia**, W. Sumatra, secondary forest near city Padang, 26.XI.1999, A. Gorochoy (ZIAS). Specimen collected as larva, imago reared V.2000.

Description. Male (holotype). Coloration uniformly light brown, but with yellowish mouthparts, membranes of tegminal lateral part, and ventral parts of thorax and abdomen (all tegminal veins slightly or hardly darker than cell membranes). Head without distinct dorsal concavity; ocelli rather large (lateral ones slightly longer than area between lateral and median ocelli). Fore tibia similar to that in Fig. I: 16. Genitalia and spermatophore as in Figs VII: 1-4.

Female unknown.

Length (in mm). Body 14.5; body with wings 25; pronotum 2.7; tegmina 16.5; hind femora 9.8.

Comparison. The new species is similar to *A. peraki*, *A. japonicus*, *A. rufescens*, *A. karnyi*, and *A. siveci* in the uniform coloration, but differs in the larger size in combination with the rather convex (in profile) distal parts of epiphallus (Fig. VII: 3) and obliquely concave lateral edge of distal ectoparameral lobes (Fig. VII: 2).

Etymology. The new species is named in honour of I.M. Kerzhner, editor of this journal.

Aphonoides sabahi sp. n.
(Figs VIII: 1-4)

Holotype. ♂, **Malaysia**, Sabah (N. Borneo), "Tawai Plat. 1300 ft, 8 m, S. Telupid, 8.IX.1977" (BMNH).

Paratype. ♀, same data as for holotype (BMNH).

Description. Male (holotype). Coloration uniformly yellowish grey (very light), but with sparse brown dots on pronotum, legs, and cerci (these dots more numerous on femora), narrow darkish stripe on dorsal tegminal part (along its lateral edge) interrupted by 6 small whitish spots, and rather small brownish spots between bases of *Sc* branches on lateral tegminal part (coloration of all veins and cell membranes in tegmina almost identical, but longitudinal veins with numerous and very small indistinct darkenings). Head without distinct dorsal concavity; ocelli much smaller than areas between them. Fore tibiae similar to those in Fig. I: 14, but with inner tympanum somewhat larger. Genitalia and spermatophore as in Figs VIII: 1-4.

Female. Similar to male, but pronotal disc slightly darkened and provided with a pair of lighter spots, many of cell membranes in tegminal dorsal part with slight darkish spot at centre. Ovipositor slightly longer than hind femur.

Length (in mm). Body: ♂ 12.5, ♀ 13.5; body with wings: ♂ 19, ♀ 21.5; pronotum: ♂ 2, ♀ 2.3; tegmina: ♂ 12.5, ♀ 14; hind femora: ♂ 8, ♀ 8.7; ovipositor 9.

Comparison. The new species is slightly similar to *A. acutus* in the shape of the fold at the base of distal ectoparameral lobe, but its middle ectoparameral part is not curved, the medial part of ectoparameral lobe is with angular projection, and the hind epiphallic lobes are almost truncate. *A. sabahi* differs also from all other congeners with more or less uniform coloration in the shape of genital structures (see Figs V-IX; XI: 4-6).

Aphonoides popovi sp. n.
(Figs VIII: 5-7)

Holotype. ♂, **Singapore**, "H.N. Ridley, 1900-242" (BMNH).

Description. Male (holotype). Coloration uniformly reddish yellow with only a pair of lighter (yellowish) spots on pronotal disc and all tegminal veins (including crossveins) hardly darker (brownish) than cell membranes. Head without distinct dorsal concavity; ocelli rather large (lateral ones slightly longer than area between lateral and median ocelli). Fore tibiae more or less similar to those in Fig. I: 15, but inner tympanum slightly smaller. Genitalia as in Figs VIII: 5-7.

Female unknown.

Length (in mm). Body 13.2; body with wings 20; pronotum 2.4; tegmina 15; hind femora 9.3.

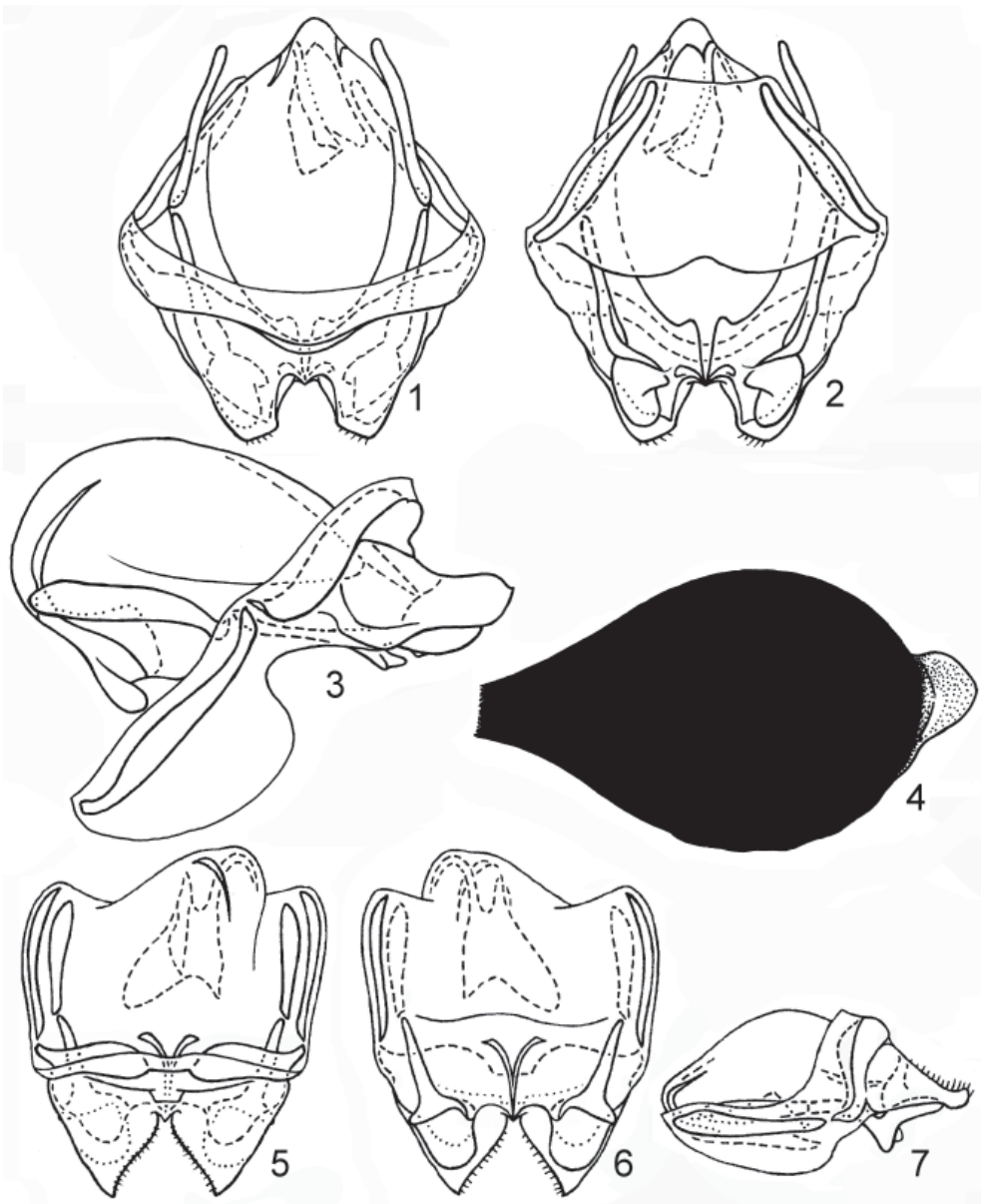
Comparison. From all known congeners with uniform coloration, *A. popovi* differs in the almost acute hind epiphallic lobes, wide distal ectoparameral lobes, and comparatively short and straight proximal ectoparameral parts (Figs VIII: 5-7).

Etymology. The new species is named in memory of G.B. Popov for his big help during my work in BMNH in 1996.

Aphonoides berezini sp. n.
(Figs X: 1-5)

Holotype. ♂, **Indonesia**, W. Java, Situ Gunung (Nat. reserve Gede-Pangrango) near city Sukabumi, forest, 11-12.IV.2003, M. Berezin (ZIAS).

Description. Male (holotype). Coloration almost uniformly brown, but with brownish grey tegmina having distinctly darker veins (longitudinal veins dark brown; crossveins blackish), dark spots on apex of maxillary palpi, darkened second tarsal segments and anal plate. Head almost without distinct dorsal concavity; ocelli almost as in *A. siveci*. Fore tibiae more or less similar to those in Fig. I: 16. Genitalia and spermatophore as in Figs X: 1-5.



Figs VIII (1-7). *Aphonoides*, ♂. 1-4, *A. sabahi* sp. n.; 5-7, *A. popovi* sp. n. Genitalia from above (1, 5), from below (2, 6), and from side (3, 7); ampulla of spermatophore from side (4).

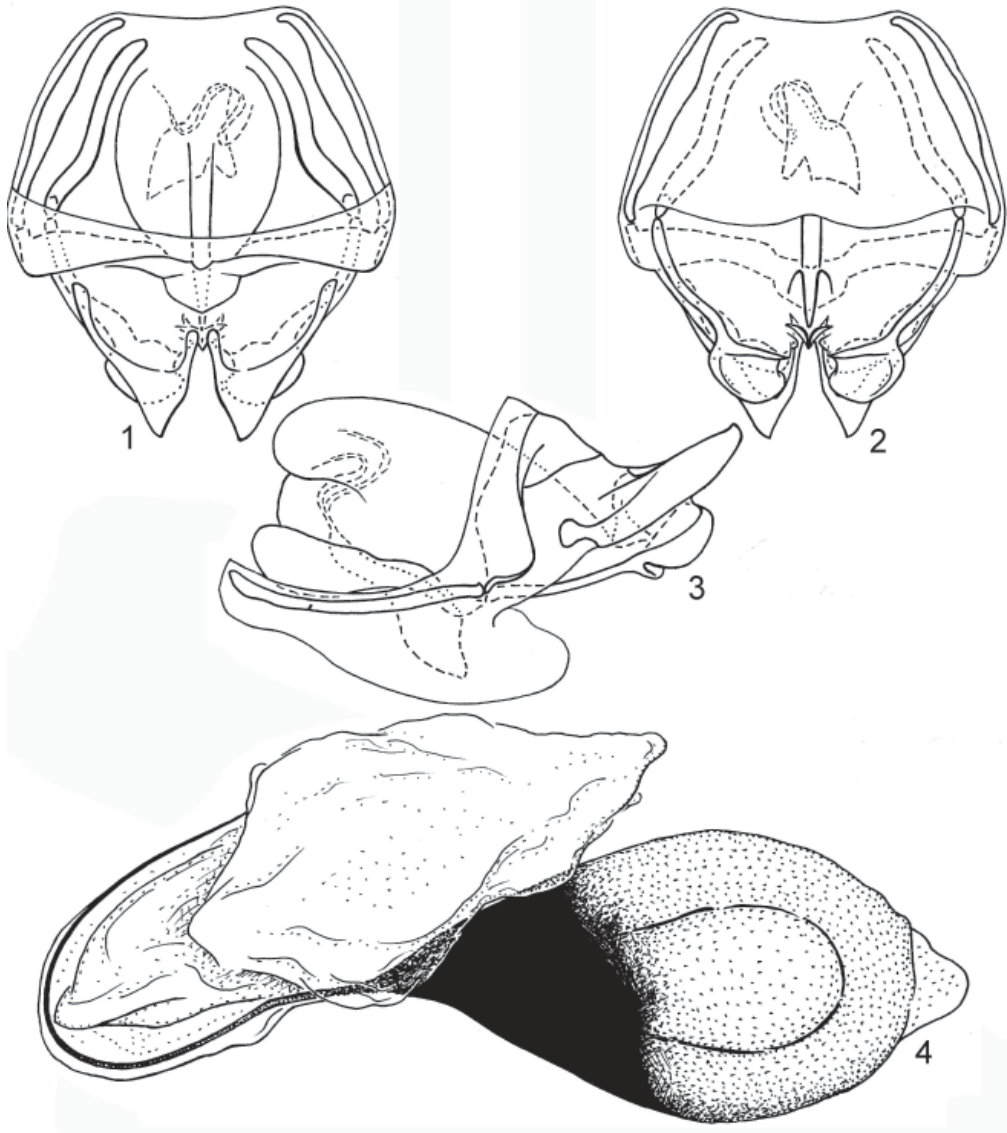
Female unknown.

Length (in mm). Body 11.5; body with wings 17.3; pronotum 2.1; tegmina 11.5; hind femora 6.9.

Comparison. The new species differs from the other congeners or possible congeners with more or less uniform coloration in the very dark (blackish) tegminal crossveins and the characteristic

structure of the male genitalia having short hind epiphallic lobes, long and arched proximal part of ectoparameres, and high (almost keel-like) transverse fold at the base of ectoparameral distal lobe (Figs X: 1-4).

Etymology. The new species is named after its collector.



Figs IX (1-4). *Aphonoides rufescens* Ichik., ♂. 1, genitalia from above; 2, same from below; 3, same from side; 4, spermatophore from side.

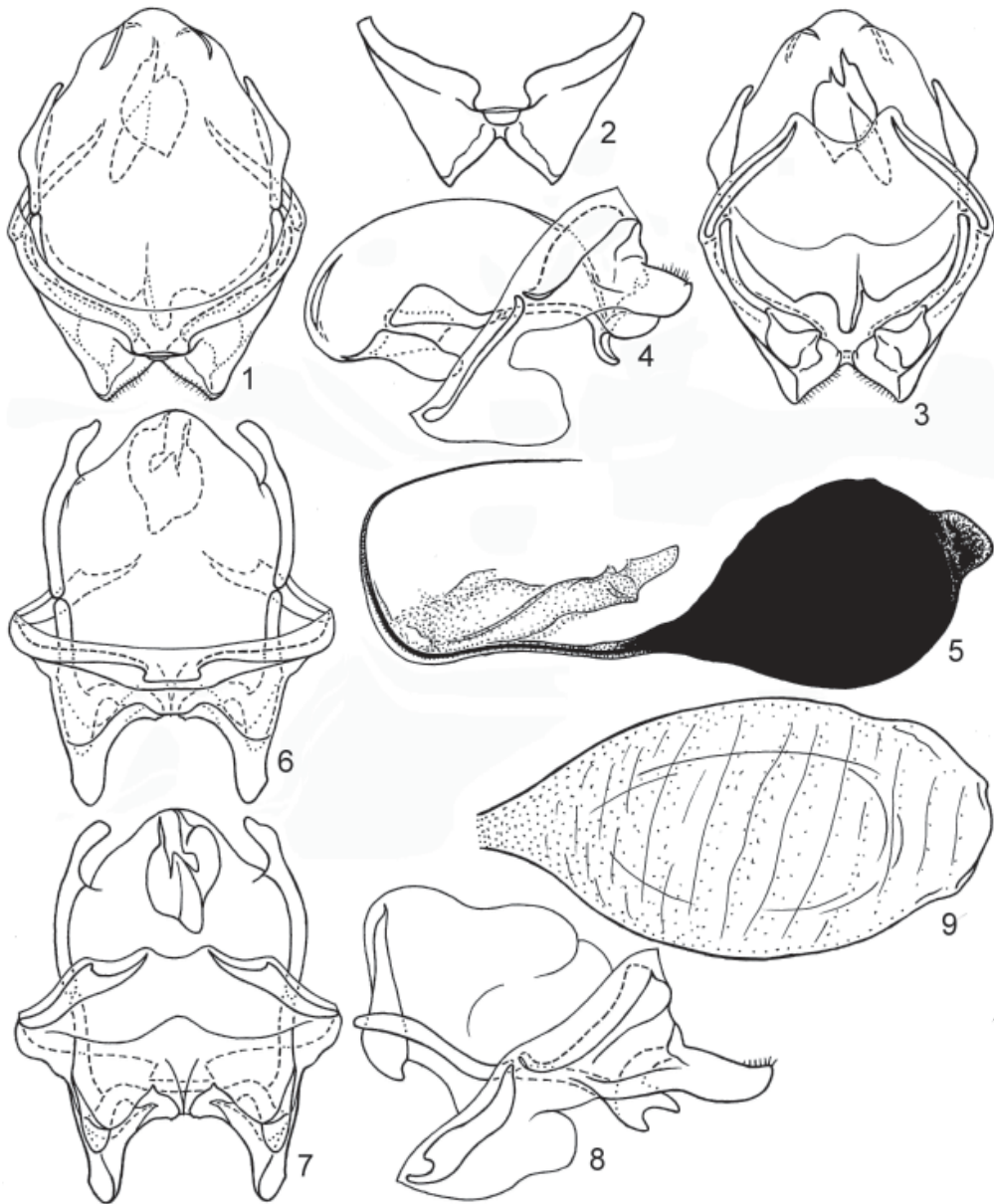
***Aphonoides sarawaki* sp. n.**
(Figs I: 5; X: 6-9)

Holotype. ♂, **Malaysia**, Sarawak (N. Borneo), “Gunong Mulu Nat. park, R.G.S. Exped. 1977-8, J.D. Holloway et al.”, “Site 14, February, Camp 2.5, Mulu, 1000 m, 413461, Lower l, montane for., MV-canopy/understorey” (BMNH).

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

Description. **Male** (holotype). Coloration brown with dark brown frons, two proximal seg-

ments of antennae, and apex of labrum, distinctly lighter (light brown) part of head dorsum between fore halves of eyes and rostral apex, narrow vertical line under rostral apex, genae under eyes, mouthparts, antennal flagellum, legs, tegmina, ventral parts of thorax and abdomen, and cerci, but hind tibiae with 3 slight darkenings on dorsal surface, and tegmina with darker (brown) veins (including crossveins) and spot at base of dorsal part. Head dorsum without concavity; ocel-



Figs X (1-9). *Aphonoides*, ♂. 1-5, *A. berezini* sp. n.; 6-9, *A. sarawaki* sp. n. (holotype). Genitalia from above (1, 2, 6), from below (3, 7), and from side (4, 8) (2, only epiphallus); spermatophore from side (5, 9) (9, only ampulla).

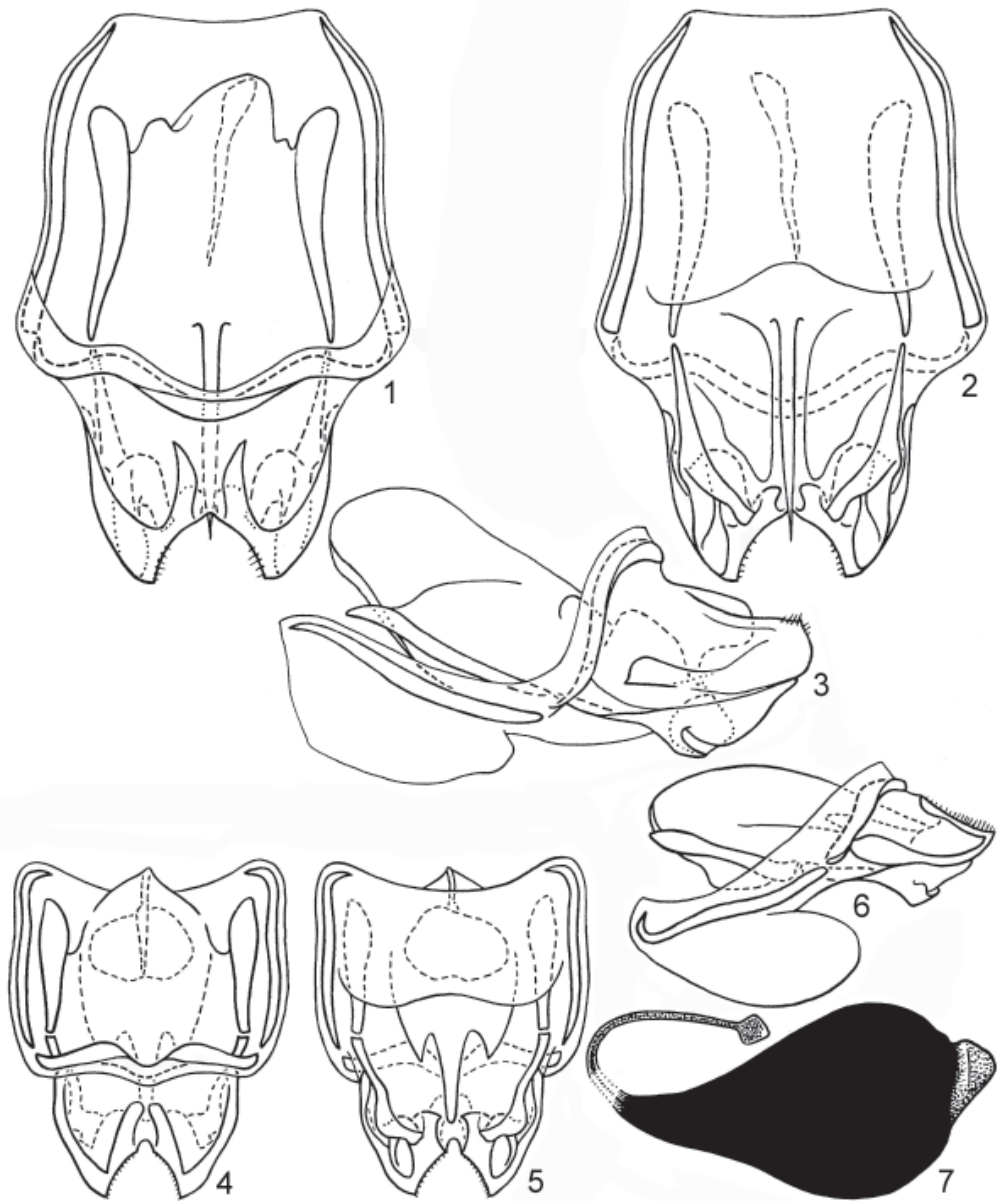
li distinctly shorter than areas between them. Fore tibiae similar to those in Fig. I: 16. Anal plate with hardly more angular lateral lobes than those in Fig. I: 17; genitalia and spermatophore ampulla as in Figs X: 6-9.

Variation. Paratype with almost light brown parts of head behind eyes and lower parts of lat-

eral pronotal lobes; its scapes with slightly lighter dorsal surface, and its tegminal membranes darker (brown).

Female unknown.

Length (in mm). Body 11-12; body with wings 18-19; pronotum 2.2-2.3; tegmina 12-13; hind femora 7.4.



Figs XI (1-7). *Aphonoides*, ♂. 1-3, *A. hollowayi* sp. n.; 4-7, *A. kamyi* Chop. (lectotype; Gorochoy, 1990). Genitalia from above (1, 4), from below (2, 5), and from side (3, 6); spermatophore from side (7).

Comparison. The new species is clearly distinguished from all congeners by the remarkable coloration of head (Fig. I: 5) and the structure of the male genitalia (especially comparatively long and narrow hind epiphallic lobes, outlines of notch between them, and shape of distal ectoparameral parts; Figs X: 6-8).

***Aphonoides hollowayi* sp. n.**
(Figs XI: 1-3)

Holotype. ♂, **Malaysia**, Sarawak (N. Borneo), “Gunong Mulu Nat. park, R.G.S. Exped. 1977-8, J.D. Holloway et al.”, “Site 28, May, Nr. Long Pala, FEG 1a, 328428, 50 m, Alluvial forest, MV-understorey” (BMNH).

Paratype. ♀, same data as for holotype, but "Site 19, March, W. Melinau Gorge, 100 m, 427567, Alluvial forest, ACL-understorey" (BMNH).

Description. Male (holotype) Coloration uniformly light brown, almost yellowish, but with slightly darker (brown) small spots under lateral corners of antennal cavities, tegminal veins (including crossveins), and spots on anal plate. Head dorsum without distinct concavity; ocelli shorter than areas between them. Fore tibiae similar to those in Fig. I: 16, but inner tympanum slightly larger. Anal plate similar to that in Fig. I: 17 (as in all previous species, excepting *A. sarawaki*); genitalia as in Figs XI: 1-3.

Female. Similar to male, but without darkish spots under lateral corners of antennal cavities and with hardly smaller inner tympana. Ovipositor somewhat shorter than hind femur.

Length (in mm). Body: ♂ 10-12, ♀ 10; body with wings: ♂ 17.5, ♀ 17; pronotum: ♂ 2, ♀ 1.9; tegmina: ♂ 11.3, ♀ 11.5; hind femora: ♂ 7.5; ♀ 7.7; ovipositor 6.6.

Comparison. The new species is most similar to *A. karnyi* in the structure of the male genitalia, but differs in the lighter coloration and the shape of some genital structures: epiphallus narrower and with more obtuse apices of hind lobes in profile; ectoparameres with distinctly longer medial sclerotized lobes (folds) of distal part (these lobes directed more or less backwards in *A. hollowayi*, and medially, in *A. karnyi*; for comparison, see Figs XI: 1-3 and 4-6); ovipositor somewhat longer (in *A. karnyi*, length of pronotum similar to that of *A. hollowayi*, but length of ovipositor 5.5-5.7 mm). From all other true and possible congeners, the new species differs in the combination of characters: light uniform coloration, small ocelli, darkish venation, large tympana, length of ovipositor, and structure of ectoparameres similar to that of *A. karnyi* and partly to that of *A. sarawaki*.

Etymology. The new species is named after its collector.

Aphonoides karnyi Chopard, 1940
(Figs I: 16; XI: 4-7)

Lectotype. ♂, **Malaysia**, Sarawak (N. Borneo), "Mt. Dulit, 4000 ft, Moss forest, 28.X.1932", "light traps", "Oxford Univ. Exp. B.M. Hobby & A.W. Moore" (ZIAS).

Other material examined. **Malaysia:** 16 ♂ and 2 ♀ (paralectotypes), same data as for lectotype (BMNH, ZIAS); 1 ♀ (paralectotype), Sarawak, "foot of Mt. Dulit, 18.IX.1932" (BMNH); 1 ♀, Sarawak, "Gunong Mulu Nat. park, R.G.S. Exped. 1977-8, J.D. Holloway et al.", "Site 15, February, Camp 2.5, Mulu, 1000 m, 413461, Lower 1, montane f., MV-understorey" (BMNH).

Note. This species as well as *A. pubescens* were very briefly described by Chopard (1940) for specimens from Java and Borneo. He indicated also that these species must be described from

Java in another paper, but this paper was not published. Later one of these specimens (received by me as a result of exchange between BMNH and ZIAS) was designated as lectotype of this species, because no any specimen was designated by Chopard as holotype or type, and all his specimens (from Borneo and Java) were only syntypes (Gorochoy, 1990). During my work in BMNH in 1996, these paralectotypes were examined, but syntypes of *A. pubescens* were not found.

A. karnyi is similar to *A. hollowayi*, but its coloration is darker (uniformly brown) and with hardly lighter legs. The other differences between these species are given above (see comparison after description of *A. hollowayi*). The spermatophore of *A. karnyi* is remarkable, with rather short and thick tube provided with apical inflation and possibly lacking spermatophylax (Fig. XI: 7).

Length (in mm). Body: ♂ 12, ♀ 11; body with wings: ♂ 18, ♀ 19; pronotum: ♂ 2.1, ♀ 2.1; tegmina: ♂ 13, ♀ 12.5; hind femora: ♂ 7.2, ♀ 7.2; ovipositor 5.5.

Aphonoides tawai sp. n.
(Figs I: 6; XII: 1-3)

Holotype. ♂, **Malaysia**, Sabah (N. Borneo), "Tawai Plat. 1300 ft, 8 m, S. Telupid, 8.IX.1977" (BMNH).

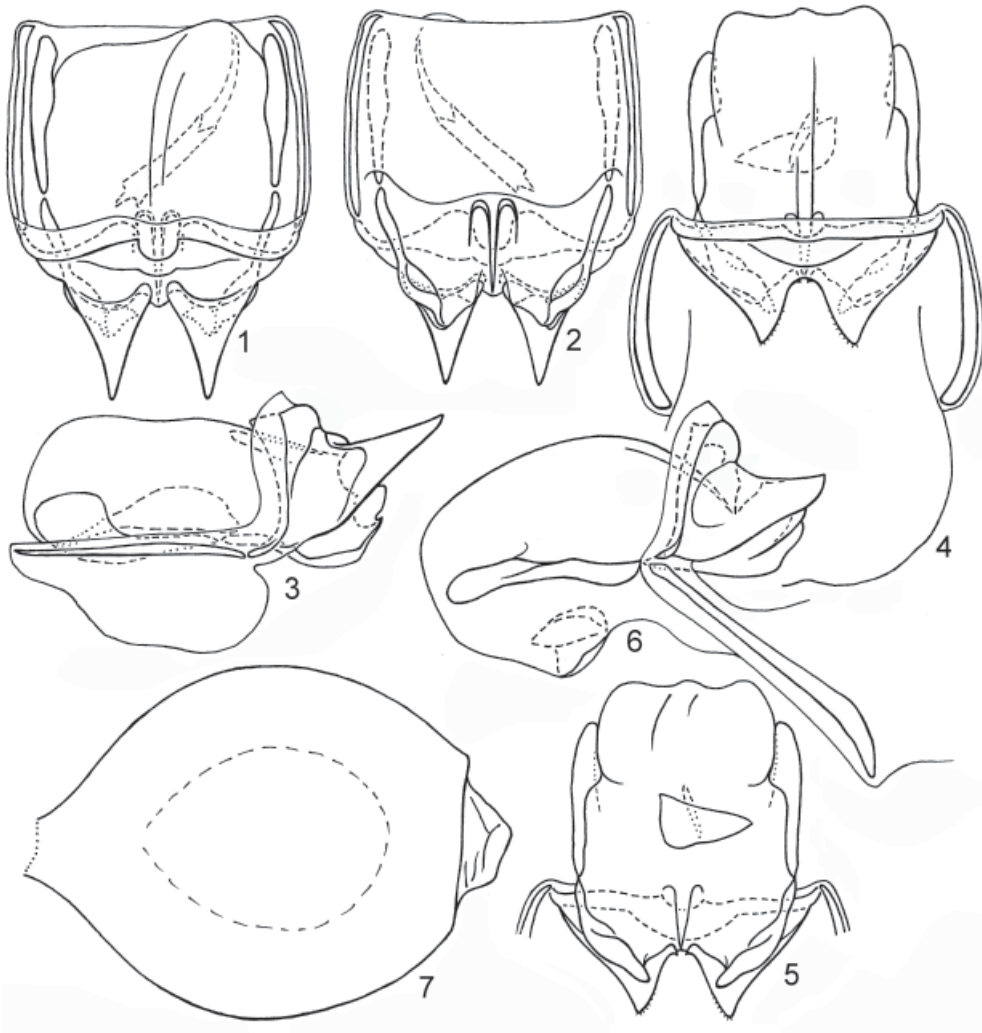
Paratype. ♀, same data as for holotype (BMNH).

Description. Male (holotype). Coloration yellowish with brown dorsal part of both head and pronotum, two proximal segments of antennae, and spot between antennal cavities (pronotal disc with a pair of distinct light spots), dark brown upper part of rostral apex (Fig. I: 6), greyish tegminal membranes, and brownish (slightly darker than membranes) all tegminal veins (including crossveins). Head dorsum without distinct concavity; length of lateral ocelli almost equal to distance between lateral and median ocelli. Fore tibiae intermediate between those in Figs I: 15 and 16. Anal plate similar to that in Fig. I: 17; genitalia as in Figs XII: 1-3.

Female. Similar to male, but fore tibiae with weakly darkish spots on dorsal surface and coloration of upper part of rostral apex very similar to that of dorsal part of head. Ovipositor distinctly shorter than hind femur.

Length (in mm). Body: ♂ 13, ♀ 12.5; body with wings: ♂ 18, ♀ 19; pronotum: ♂ 2, ♀ 2.1; tegmina: ♂ 11.5, ♀ 12; hind femora: ♂ 7, ♀ 7.2; ovipositor 5.3.

Comparison. The new species differs from all congeners with more or less uniform coloration in the darkened dorsal part of both head and pronotum, base of antennae, and tegminal venation, as well as the very characteristic male genitalia with rather long, acute hind epiphallal lobes and



Figs XII (1-7). *Aphonoides*, ♂. 1-3, *A. tawai* sp. n.; 4-7, *A. dohrni* sp. n. (holotype). Genitalia from above (1, 4), from below (2, 5), and from side (3, 6) (5, without rami and valves); ampulla of spermatophore from side (7).

distal ectoparameral part lacking very distinct folds at base (Figs XII: 1-3).

***Aphonoides dohrni* sp. n.**
(Figs XII: 4-7)

Holotype. ♂, **Indonesia**, “Sumatra, Soekaranda”, H. Dohrn (MIZP).

Paratype. 1 specimen (sex unclear), same data (ZIAS).

Description. Male (holotype). Similar to *A. tawai*, but head with slightly lighter dorsum (hardly darker than other parts of head), light brown antennae (including basal segments), almost uniformly brownish pronotum, and dark-

enings on dorsal surface of all tibiae: fore tibiae with wide dark band running from tibial base to tibial apex; middle tibiae with distinctly narrower darkish stripe divided into proximal and distal parts by small lightish area; hind tibiae with 3 darkish spots (proximal, middle, and distal) including nearest spines. Genitalia and spermatophore ampulla as in Figs XII: 4-7.

Paratype. Sex of this specimen unclear as its abdominal apex missing. Coloration of pronotum lighter, almost light brown.

Length (in mm). Body 10.5; body with wings 15-15.5; pronotum 1.8-1.9; tegmina 10.3-10.6; hind femora 6.6-6.8.

Comparison. The new species differs from all congeners in the almost uniformly light coloration with dark dorsal surface of fore tibiae as well as the male genitalia similar to those of *A. tawai* (but in *A. dohrni*, hind epiphallal lobes and proximal ectoparameral parts distinctly shorter; Figs XII: 4-6).

Etymology. The new species is named after its collector.

Aphonoides? siami sp. n.

Holotype. ♀, **W. Thailand**, prov. Phetchaburi (N. Malacca), 50 km SW of town Phetchaburi, near head-office of Nat. park Kaeng Krachan, secondary forest near reservoir, 30-31.VII.1996, A. Gorochov (ZIAS).

Description. Female (holotype). Coloration almost uniformly light brown, but pronotal disc brown with a pair of lighter spots, dorsal surface of all tibiae with narrow dark stripe running from tibial base to tibial apex (in distal part of hind tibiae, this stripe almost indistinct), and all tegminal veins (including crossveins) brown (somewhat darker than cell membranes). Head without distinct dorsal concavity; ocelli shorter than areas between them. Fore tibiae almost as in *A. tawai*. Ovipositor somewhat shorter than hind femur.

Male unknown.

Length (in mm). Body 12; body with wings 17; pronotum 2; tegmina 12.8; hind femora 7.3; ovipositor 6.

Comparison. The new species is more or less similar to *A. dohrni* in the coloration of tibiae, but it is clearly distinguished by the slightly smaller ocelli, lateral lobes of pronotum distinctly lighter than its disc, dark stripe on fore tibiae much narrower, presence of long dark stripe on hind tibiae, and all hind tibial spines light.

Aphonoides? khaoyai sp. n.

Holotype. ♀, **E. Thailand**, prov. Nakhon Ratchasima, env. of Nat. part Khao Yai, primary forest, 500-1000 m, 26.X-4.XI.2000, A. Gorochov & L. Anisyutkin (ZIAS).

Description. Female (holotype). Very similar to *A. ? siami*, but distinguished by darker (brown) head dorsum and slight darkenings on scapes, less light lateral lobes of pronotum (they are only hardly lighter than pronotal disc), presence of darkish dots on fore and middle legs as well as oblique strokes on outer surface of hind femora, shorter dark longitudinal stripe on dorsal surface of fore tibiae (proximal and distal parts of these tibiae light), and interrupted dark stripe on dorsal surface of hind tibiae (this stripe is divided into 3 dark spots, which include parts of nearest spines almost as in *A. dohrni*, but not as in *A. ? siami*). Ovipositor distinctly shorter than hind femur.

Male unknown.

Length (in mm). Body 10.5; body with wings 19.5; pronotum 2.4; tegmina 13.3; hind femora 8; ovipositor 6.

Comparison. The new species is more or less similar to *A. dohrni* and *A. ? siami* in the coloration of tibiae. It differs clearly from *A. dohrni* in the slightly smaller ocelli, darker dorsal part of head and pronotum, shorter and much narrower dark stripe on fore tibiae, and presence of distinct darkish dots and strokes on femora. The differences from *A. ? siami* are given above.

Aphonoides? gialai sp. n.

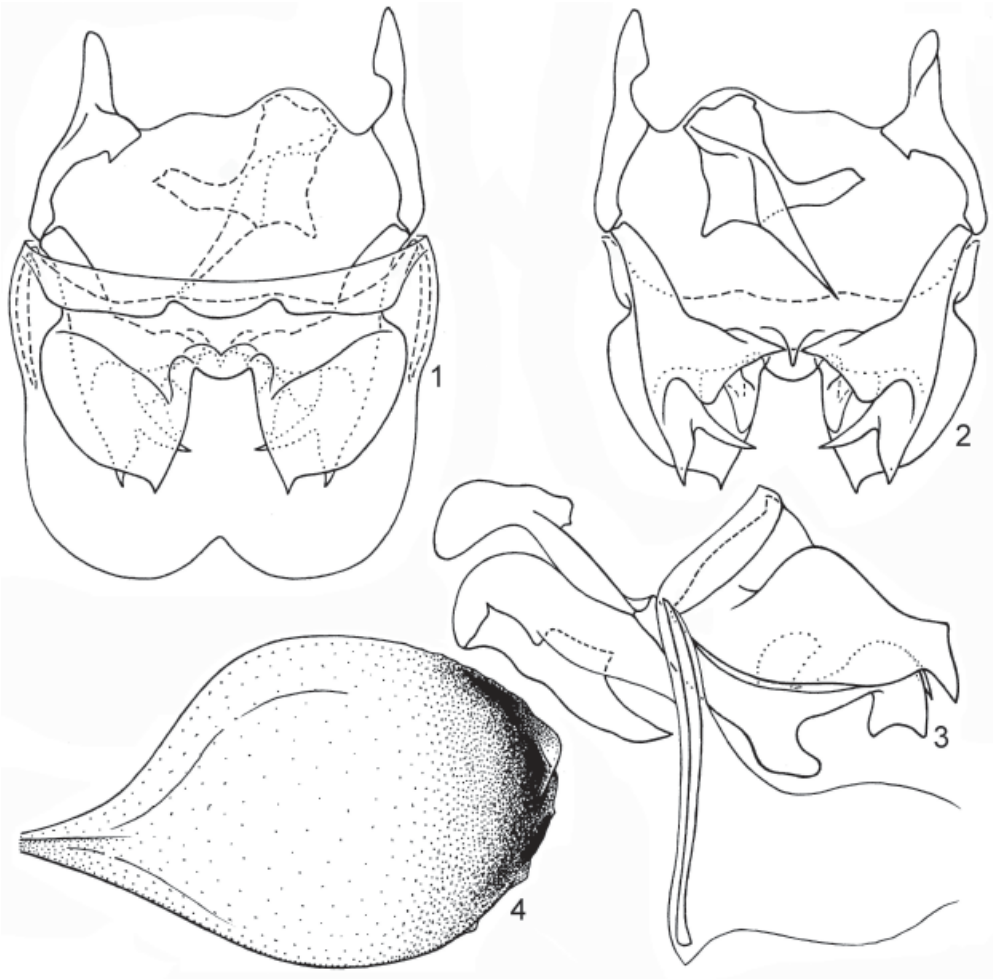
(Figs I: 11, 12)

Holotype. ♀, **Vietnam**, prov. Gia Lai, 50-60 km N of town Kannack, primary forest near vill. Kon Cha Rang, 1000-1200 m, 17.IV.1995, A. Gorochov (ZIAS).

Paratype. ♀, same province, but 20 km N of town Kannack, primary forest near vill. Buon Luoi, 700-800 m, 22-31.III.1995, A. Gorochov (ZIAS).

Description. Female (holotype). Head without distinct dorsal concavity; ocelli much shorter than areas between them; coloration of head yellowish with dark brown dorsal part, bands behind eyes, rostrum between antennal cavities, and narrow stripes along lower edges of these cavities (Fig. I: 11); antennae yellowish with brown scape (provided with a few small yellowish spots) and light brownish proximal part of flagellum. Pronotum with yellowish lateral lobes (provided with a few dark dots) and brown disc; this disc with several slightly lighter spots (a pair of largest ones, situated at middle part of disc, with small brown spot at centre). Structure of fore tibiae as in Fig. I: 12; legs yellowish, but with following darkenings: fore and middle legs with small brownish spots on distal half of femora and on dorsal and lateral surfaces of tibiae; hind legs with a few small brown spots on outer ventral keel near apex of femora, several small darkish spots on dorsal and inner femoral surfaces, and slightly spotted dorsal surface of tibiae. Tegminal dorsal part darkish grey with brownish longitudinal veins, darker crossveins, 6-7 almost dark brown large and 4-5 whitish smaller spots along lateral (humeral) edge; lateral tegminal part uniformly light grey with light brownish longitudinal veins and almost whitish crossveins. Abdomen yellowish with darkened dorsal part and light brown cerci.

Variation. Paratype distinctly lighter than holotype: head with slightly darkened fore part of dorsum, rostrum between antennal cavities, and traces of narrow stripes along lower edges of these cavities; antennal scapes partly light; pronotum almost uniformly light brownish with only a pair of small brown spots at middle part of disc and short transverse stripe behind them; tegmina



Figs XIII (1-4). *Exomunda exsecutor* sp. n., ♂, holotype. **1**, genitalia from above; **2**, same from below (without rami and valves); **3**, same from side; **4**, ampulla of spermatophore from side.

slightly lighter (dorsal part more or less light brownish grey; lateral part yellowish); hind legs almost uniformly light brownish.

Male unknown.

Length (in mm). Body 10.5-11.5; body with wings 16-17.5; pronotum 1.9-2; tegmina 11.5-12; hind femora 6.6-6.8; ovipositor 4.7-4.8.

Comparison. The new species differs from all other similar species of Aphonoidini in the structure of fore tibiae and above-mentioned characters of coloration.

Genus **Exomunda** gen. n.

Type species: *Exomunda exsecutor* sp. n.

Diagnosis. Hind epiphallic lobes short, not hooked, and undivided; ectoparameres with nar-

row and more or less long proximal part, but their distal part divided into two strong teeth, and folds at base of this part large, heavily sclerotized, and more or less angulate; spermatophore ampulla almost as in *Aphonoides* (Figs XIII: 1-4). Other characters also as in *Aphonoides*, but rostrum of head with almost angulate (from above) apex, anal and genital plates of male more or less similar to those in Figs I: 8, 9.

Included species. Type species only.

Exomunda exsecutor sp. n.
(Figs XIII: 1-4)

Holotype. ♂, **Malaysia**, Sarawak (N. Borneo), "Gunong Mulu Nat. park, R. G. S. Exped. 1977-8, J.D. Holloway et al.", "Site 20, Mar.-Apr., W. Melinau Gorge, 150 m, 422577 TEG 3, Kerangas, MV-understorey" (BMNH).

Paratype. ♂, same data as for holotype, but "Site 9, February, Camp 1, Mulu, 140 m, 384470, Mixed dipt. for., Acl-understorey" (ZIAS).

Description. Male (holotype). Head without distinct dorsal concavity; ocelli much shorter than areas between them; coloration of head light brownish with brown frons, darkish spots on mouthparts, behind eyes, and on scapes, sparse whitish rings on antennal flagellum, and distinctly spotted maxillary palpi. Pronotum with light brown disc (provided with a pair of very light spots near middle of disc) and upper half of lateral lobes; lower half of these lobes brown. Inner tympanum similar to that in Fig. I: 16, but slightly larger; legs light brownish with darkened fore femora (excepting apical part), large darkish spot on dorsal surface of fore tibiae, dark two proximal tarsal segments (but with light upper half of hind basitarsus, excepting its apex), and small darkish spots on all light parts. Tegminal dorsal part light greyish brown with whitish spot at base, dark brown spot near it, comparatively sparse light crossveins (more numerous in basal half), and indistinct lightish and darkish spots in distal half; tegminal lateral part darker (greyish brown) with a few light crossveins near dorsal edge and less distinct darkish and lightish spots on rest of this part. Abdomen more or less light; genitalia and spermatophore ampulla as in Figs XIII: 1-4.

Variation. Paratype with dorsal tegminal part less spotted and majority of crossveins in lateral tegminal part distinctly light.

Female unknown.

Length (in mm). Body 10.5-11; body with wings 16.5-17.5; pronotum 2-1.1; tegmina 11.2-11.7; hind femora 7.5-7.7.

Genus *Zamunda* gen. n.

Type species: *Aphonoides fuscirostris* Chopard, 1969 (Malacca).

Diagnosis. Hind epiphallal lobes rather long, not hooked, and undivided; ectoparameres with narrow and rather short proximal part, two processes of distal part (medial of them very long and slightly bifurcated at apex), and without distinct folds at base of this part; spermatophore ampulla almost as in *Aphonoides* (Figs XIV: 1-4). Other characters also as in *Aphonoides*, but anal and genital plates of male as in Figs I: 8, 9.

Included species. Type species and possibly *Z. ? humeralis* sp. n.

Zamunda fuscirostris (Chopard, 1969), comb. n. (Figs I: 7-9; XIV: 1-4)

Material examined. 1 ♂, **S. Thailand**, prov. Surat Thani (C. Malacca), 40 km WSW of town Phanom, env. of Nat. part Khao Sok, primary forest, 20-29.VII.1996, A. Gorochoy (ZIAS).

Note. This species was described from Selangor (Malaysia) in S. Malacca (Chopard, 1969). Here it is recorded from Thailand for the first time. The species is characterized by the following features: coloration yellowish with dark brown rostrum of head, medial halves of antennal cavities, areas between them and between fore parts of eyes, and two proximal segments of antennae (Fig. I: 7), light brown rest of head dorsum, pronotum (excepting narrow yellowish stripe along ventral edge of lateral lobes), dorsal surface of tibiae (with a rather short darker spot not far from base of each hind tibia), and slightly distinct spots and strokes on hind femora (in tegmina, all veins and crossveins hardly darker than cell membranes); head without distinct dorsal concavity and with small ocelli (which are shorter than areas between them); fore tibiae similar to those in Fig. I: 16, but with slightly longer distal part; in male, anal and genital plates, genitalia, and spermatophore ampulla as in Figs I: 8, 9; XIV: 1-4.

Length (in mm), ♂. Body 13; body with wings 19; pronotum 2.1; tegmina 12; hind femora 7.

Zamunda? humeralis sp. n.
(Fig. I: 10)

Holotype. ♀, **Malaysia**, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E, leg. Rothamsted light trap", IV-VI.1994 (ZIAS).

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

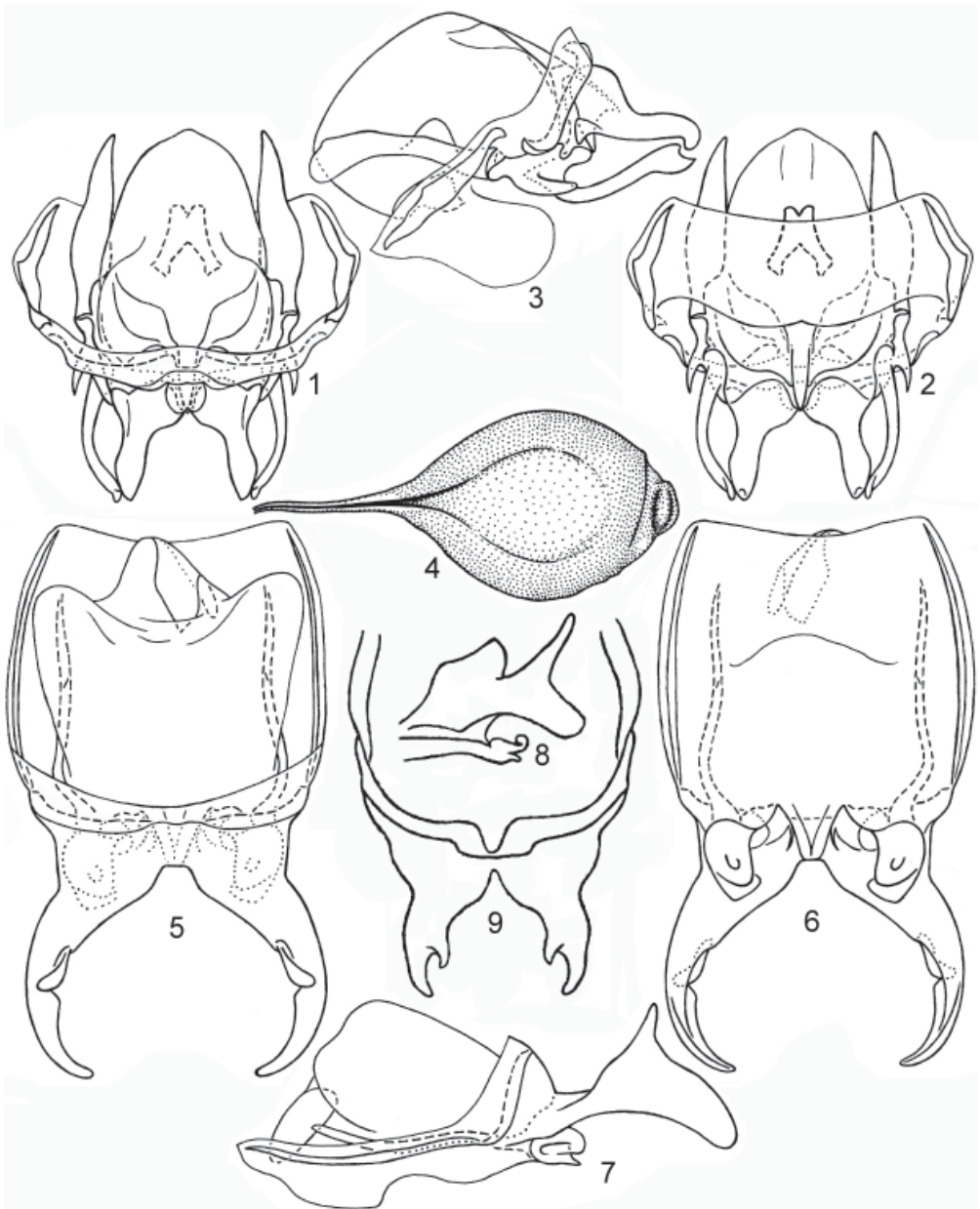
Description. Female (holotype). Coloration yellowish with brownish labrum and second tarsal segments, brown two proximal segments of antennae (excepting light base of scapes), very small strokes under lateral ocelli (Fig. I: 10), and distinct stripe along lateral (humeral) edge of dorsal tegminal part (tegmina semitransparent with yellowish veins). Head without distinct dorsal concavity; ocelli medium-sized (length of lateral ones almost equal to distance between lateral and median ocelli). Fore tibiae similar to those in Fig. I: 3. Ovipositor rather long, almost as long as hind femur.

Variation. Paratype with only partly brownish labrum.

Male unknown.

Length (in mm). Body 9.3-9.6; body with wings 17-18.5; pronotum 1.7-1.9; tegmina 11.3-12; hind femora 8; ovipositor 8-8.2.

Comparison. The new species differs from *Z. fuscirostris* in the light coloration of head rostrum, darkened labrum, and some other characters of coloration. From all other Indo-Malayan Aphonoidini, it is clearly distinguished by the yellowish coloration with dark scapes and humeral stripe on tegmina as well as the rather long ovipositor.



Figs XIV (1-9). *Zamunda* and *Furcimunda*, ♂. **1-4.** *Z. fuscirostris* (Chop.); **5-7.** *F. furcilla* sp. n.; **8, 9.** *F. bipunctata* (Chop.) (paratype; Chopard, 1969). Genitalia from above (1, 5, 9), from below (2, 6), and from side (3, 7, 8) (8, distal half; 9, epiphallus and proximal halves of rami); ampulla with tube base of spermatophore from side (4).

Genus **Furcimunda** gen. n.

Type species: *Furcimunda furcilla* sp. n.

Diagnosis. Hind epiphallic lobes very long, arched, and divided into two processes; ectoparameres with narrow and long proximal part, short distal part divided into two lobes, and

slight rounded folds at base of latter part (Figs XIV: 5-9). Other characters as in *Aphonoides*, but male anal and genital plates more similar to those of *Exomunda* and *Zamunda* (almost as in Figs I: 8, 9).

Included species. Type species and *Aphonoides bipunctatus* Chopard, 1969 (S. Malacca).

Furcimunda furcilla sp. n.
(Figs XIV: 5-7)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), "Hulu, 5°30'07"N, 101°26'21"E, Rothamsted light trap, Belum expedition, B. Camp", IV-V.1994 (ZIAS).

Paratypes: **Malaysia**: 2 ♀, same data as for holotype, but one of them collected by I. Sivec (not by light trap) (ZIAS); **Indonesia**: 1 ♀, N. Sumatra, "SW of Kisaran, 2°42'18"N, 99°22'42"E", 5.III.1994, I. Sivec (ZIAS).

Description. *Male* (holotype). Almost uniformly light brownish. Ocelli comparatively large (lateral ones longer than distance between median and lateral ocelli); coloration of head yellowish with light brown upper part and spots behind eyes, narrow brownish stripes along lateral edges of rostral apex, and small brown spots on proximal half of scapes. Pronotal disc brownish with several yellowish spots; a pair of largest yellowish spots (situated at middle part of disc) with small brown spot at centre; pronotal lobes yellowish with several dark dots. Inner tympanum more or less similar to that in Fig. I: 16; fore and middle legs yellowish with small brownish spots on distal half of femora as well as on dorsal and lateral surfaces of tibiae (hind legs missing). Wings long (hind wings distinctly longer than tegmina); tegminal dorsal part light brownish with brown venation; lateral tegminal part similar, but membranes almost transparent. Abdomen yellowish with darkened dorsal part and brownish spots on cerci; genitalia as in Figs XIV: 5-7.

Female. Similar to male, but slightly darker, dorsal part of head with darkish or dark bands between lateral ocelli and along fore edge of pronotum, these bands sometimes connected with each other by a few darkish longitudinal lines, hind band sometimes consisting of a few spots, pronotal disc usually darker than in holotype (brown or dark brown) and with more distinct light spots, hind femora yellowish with some darkenings (reticular brownish ornament on outer surface, a few small brown spots on outer ventral keel near apex, several small darkish spots on dorsal and inner surfaces), and hind tibiae distinctly spotted.

Length (in mm). Body: ♂ 10.5, ♀ 10-11.5; body with wings: ♂ 19, ♀ 20-21; pronotum: ♂ 2.4, ♀ 2.5-2.7; tegmina: ♂ 13.5, ♀ 14-14.5; hind femora, ♀ 8.5; ovipositor 6.8-7.

Comparison. The new species differs from *F. bipunctata* (Chopard), **comb. n.** in the lateral pronotal lobes not darkened (lighter than disc), pronotal disc with a pair of small (not large) brown spots on middle part, tegminal dorsal part without dark spots, tegminal lateral part without darkened band along dorsal edge, lower process of hind epiphallic lobes (in the male genitalia) distinctly longer, and their upper process shorter (for comparison, see Figs XIV: 5-7 and 8, 9).

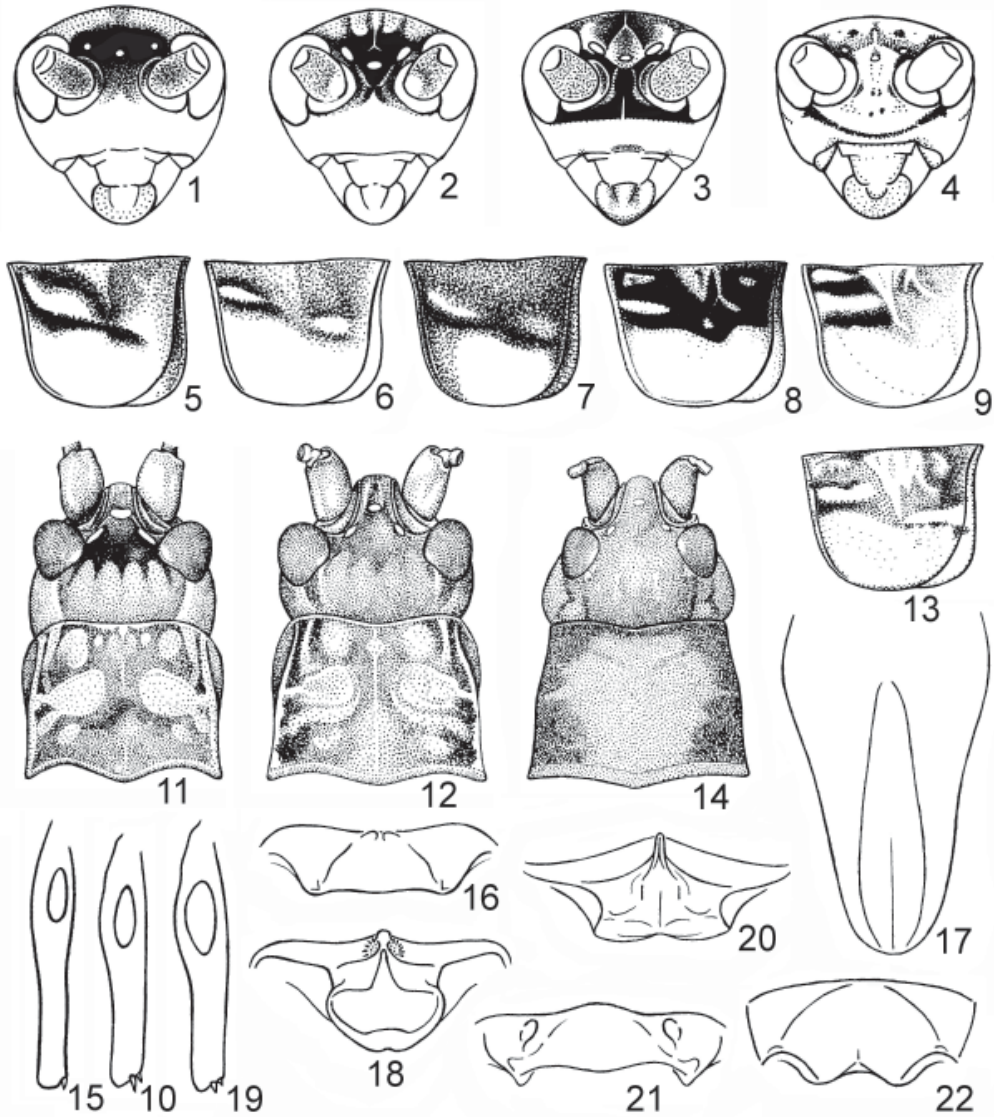
Note. The difference in coloration between these species is maybe more important than in the male genitalia, as the holotype of *F. bipunctata* is a female from the eastern part of S. Malacca (Pahang), and the paratype (a single known male) is from Sumatra (Chopard, 1969) and may belong to another species.

Genus **Mistshenkoana** Gorochov, 1990

Type species: *Mistshenkoana kongtumensis* Gorochov, 1990 (S. Vietnam).

Note. This genus was described for Indo-Malayan and Oceanian Aphonoidini (Gorochov, 1990) with the following combination of characters: shape of body parts similar to that of previous genera (including structure of tympanal organ and tegminal Sc, shape of ovipositor), but rostrum of head as in *Aphonoides*, *Zamunda*, *Furcimunda*, and hind wings sometimes shortened (but not shorter than tegmina; usually these wings distinctly longer than tegmina, as in all previous genera); male anal plate with a small median projection (usually bifurcate) at proximal part (Figs XV: 16, 18, 20); male genital plate longer than in all previous genera (in connection with long spermatophore ampulla) and usually with ventral longitudinal concavity (absent in previous genera) (Fig. XV: 17); male genitalia with hind epiphallic lobes short, not hooked, and undivided; sclerotized proximal part of ectoparameres comparatively widened and short; their lobe-like distal part not widened, lacking any folds at base, and separated from proximal part by medial sclerotized process; spermatophore with very elongate ampulla (Figs XVI: 4, 11; XIX: 4; XXII: 4, 8). The tegmina in this genus are often with small darkish spots around some of crossveins in distal half only or with almost whitish crossveins in more or less uniformly coloured forms.

Included species (additional to the type species). *Podoscirtus cicur* Saussure, 1878 (Philippines), *P. taciturnus* Saussure, 1878 (Java; see Ingrisch, 2005), *Aphonomorphus gracilis* Chopard, 1925 (Philippines), *Podoscirtus angustifrons* Chopard, 1930 (Borneo), *Aphonoides bilineatus* Chopard, 1954 (Java), *A. caudatus* Bey-Bienko, 1966 (Komodo I.), *M. beybienkoi* Gorochov, 1990 (Komodo I.), *M. belokobylskiji* Gorochov, 1992 (Vietnam), *A. yaeyamensis* Oshiro, 1998 (Japan), *M. nhachangi* sp. n., *M. anisyutkini* sp. n., *M. buonluoi* sp. n., *M. padangi* sp. n., *M. kisarani* sp. n., *M. javae* sp. n., *M. aperta* sp. n., *M. ornata* sp. n., *M. sumbawae* sp. n., *M. abbreviata* sp. n., *M. nigrifrons* sp. n., *M. pangrango* sp. n., *M. tembelingi* sp. n., *M. hulu* sp. n., *M. borneo* sp. n., *M. proxima* sp. n., *M. discreta* sp. n., *M. propria* sp. n., and possibly *Aphonoides chopardi* Bey-Bienko, 1966 (Komodo I.), *A. tes-*



Figs XV (1-22). 1, *Mistshenkoana buonluoi* sp. n.; 2, *M. javae* sp. n.; 3, *M. ornata* sp. n. (holotype); 4, *Munda pulchella* sp. n. (holotype); 5-7, *Mistshenkoana ?bilineata* (Chop.) (5, Malacca; 6, Java; 7, Sumatra); 8, *M. padangi* sp. n. (holotype); 9, *M. kisarani* sp. n.; 10, *M. ? chopardi* (B.-Bien.) (holotype); 11, *M. ?* sp. (paratype of *M. ? chopardi*); 12, 13, *M. caudata* (B.-Bien.) (holotype); 14, *Munda darevskii* (B.-Bien.) (holotype); 15-17, *Mistshenkoana kongtumensis* Gor. (holotype); 18, *M. javae* sp. n.; 19, *M. sumbawae* sp. n. (holotype); 20, *M. borneo* sp. n.; 21, *Dinomunda gri-seipennis* (Chop.); 22, *Munda certa* sp. n. Head in front (1-4); pronotum from side (5-9, 13); head with pronotum from above (11, 12, 14; Bey-Bienko, 1966); inner surface of fore tibia (10, 15, 19); male anal plate from above and slightly from behind (16, 18, 20-22); male genital plate from below (17).

sellatus Chopard, 1969 (Malacca), and *M. ? reticulata* sp. n. The species from New Guinea and nearest islands as well as from Australia and the rest of Oceania which belong or possibly belong to this genus will be considered in the next paper, as they are in need of additional study.

***Mistshenkoana kongtumensis* Gorochov, 1990** (Figs XV: 15-17; XVI: 1-4)

Holotype. ♂, S. Vietnam, prov. Gia Lai [former Gia Lai Con Tum (Kongtum)], secondary forest near town Kannack, 600-700 m, 8-16.XI.1988, A. Gorochov (ZIAS).

Additional material examined. **S. Vietnam:** 3 ♀ (two of them paratypes), same data as for holotype (ZIAS); 2 ♂ (paratypes), prov. Gia Lai, 20 km N of town Kannack, primary forest near vill. Buon Luoi, 700-800 m, 17-20.XI.1988 and 24-30.IV.1995, A. Gorochov (ZIAS).

Note. This species is characterized by the following features: almost uniform light greyish brown coloration with small dark spots under lateral ocelli, darkened bases of spines of hind tibiae, small darkish spots near spines and some denticles on inner side of tibiae (the latter spots sometimes absent), and slight darkenings around majority of crossveins in distal half of tegminal dorsal part; small and elongate ocelli (which are shorter than areas between them); fore tibiae as in Fig. XV: 15; hind wings slightly longer than tegmina; male anal plate transverse and with small median bifurcated projection on proximal part (Fig. XV: 16); male genital plate with rounded apex (Fig. XV: 17); male genitalia and spermatophore as in Figs XVI: 1-4.

Length (in mm). Body: ♂ 10-11, ♀ 10.5-13; body with wings: ♂ 13-14, ♀ 15.5-16; pronotum: ♂ 1.8-1.9, ♀ 2-2.1; tegmina: ♂ 9-9.5, ♀ 10-11; hind femora: ♂ 7-8, ♀ 8-8.5; ovipositor 6.5-7.

Mistshenkoana nhachangi sp. n.
(Figs XVI: 5-7)

Holotype. ♂, **S. Vietnam**, prov. Phykhanh (Phykhanh), env. of city Nhattrang (Nhachang), "forest, leaf litter", 11.VIII.1996, T. Sergeeva (ZIAS).

Description. *Male* (holotype). Very similar to *M. kongtumensis*, but distinguished by following characters: ocelli distinctly larger (length of median ocellus equal to distance between median and lateral ocelli; length of lateral ocelli greater than this distance); hind wings distinctly longer than tegmina (length of exposed distal part of hind wings 3.5 mm, vs. 1.5-1.8 mm in male of *M. kongtumensis*); genitalia with longer distal part of hind epiphallal lobes, and medial projection of ectoparameres situated in their middle (almost distal) part (Figs XVI: 5-7) (in *M. kongtumensis*, this projection situated in proximal part of ectoparameres; Fig. XVI: 2).

Female unknown.

Length (in mm). Body 12; body with wings 18; pronotum 1.8; tegmina 11.5; hind femora 7.8.

Comparison. The distinctions from *M. kongtumensis* are given in the description. From all other congeners, the new species differs in the same characters as *M. kongtumensis*.

Mistshenkoana belokobylskiji Gorochov, 1992
(Figs XVI: 8-12)

Holotype. ♂, **N. Vietnam**, prov. Vinh Phu, primary forest near vill. Tam Dao, 900-1000 m, 9-18.XI.1990, A. Gorochov (ZIAS).

Additional material examined. **N. Vietnam:** 5 ♂ and 3 ♀ (paratypes), same data as for holotype (ZIAS); 2 ♀, prov. Hoa Binh, distr. Da Bak, secondary forest near vill. Tu Ly, 16-23.X.1990, A. Gorochov (ZIAS).

Note. This species is very similar to *M. kongtumensis*, but there are some distinctions: dark spots under lateral ocelli almost undeveloped; darkenings on tegminal dorsal part very slight; male genitalia with characteristic lobe-like process at base of each hind epiphallal lobe (this process not longer than distal part of hind epiphallal lobe, directed downwards, and clearly visible in profile; Figs XVI: 10, 12); ovipositor clearly longer (9-9.5 mm in *M. belokobylskiji*; 6.5-7 mm in *M. kongtumensis*). In some specimens, the pronotum may be with more or less distinct darkenings on hind part and/or upper part of lateral lobes; sometimes almost all parts of pronotum are darkened.

Length (in mm). Body: ♂ 11-12, ♀ 12-13; body with wings: ♂ 14-15, ♀ 15-17; pronotum: ♂ 1.8-2, ♀ 2.2-2.4; tegmina: ♂ 9.5-10, ♀ 11-12; hind femora: ♂ 7.8-8, ♀ 8.5-9; ovipositor 8.8-9.2.

Mistshenkoana anisyutkini sp. n.
(Fig. XVI: 13-15)

Holotype. ♂, **E. Thailand**, prov. Nakhon Ratchasima, env. of Nat. park Khao Yai, primary forest, 500-1000 m, 26.X-4.XI.2000, A. Gorochov & L. Anisyutkin (ZIAS).

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

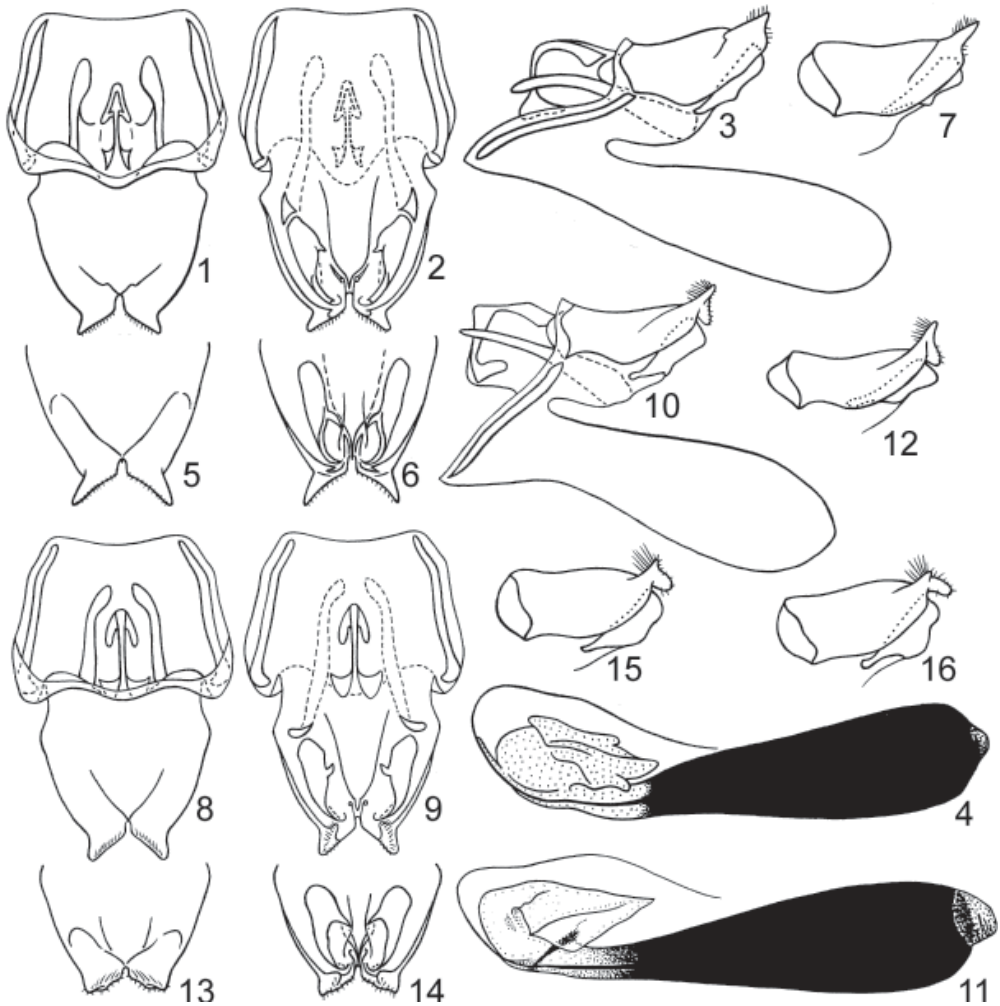
Description. *Male* (holotype). Very similar to *M. belokobylskiji*, but distinguished by following characters: median ocellus almost absent (there is very small tubercle only); hind wings distinctly longer than tegmina (length of exposed distal part of hind wings 3 mm vs. 1.5-1.7 mm in male of *M. belokobylskiji*); genitalia with shorter hind epiphallal lobes; their lower lobe-like process (situated at base of each epiphallal lobe) longer than distal part of these epiphallal lobes and directed almost backwards (Figs XVI: 13-15).

Female. Similar to male. Ovipositor hardly shorter than hind femur (slightly shorter than in *M. belokobylskiji*).

Length (in mm). Body: ♂ 12, ♀ 11; body with wings: ♂ 17, ♀ 20; pronotum: ♂ 1.9, ♀ 2.3; tegmina: ♂ 11.5, ♀ 13.5; hind femora: ♂ 8.5, ♀ 10; ovipositor 9.5.

Comparison. The distinctions from *M. belokobylskiji* are given in the description. From *M. kongtumensis*, *M. nhachangi*, and all other congeners, the new species differs in the presence of characteristic lower lobe-like process (somewhat similar to that of *M. belokobylskiji*) at the hind epiphallal lobes of the male genitalia.

Etymology. The new species is named after one of its collectors.



Figs XVI (1-16). *Mistshenkoana*, ♂. **1-4.** *M. kongtumensis* Gor. (holotype; Gorochov, 1990); **5-7.** *M. nhachangi* sp. n.; **8-12.** *M. belokobylskiji* Gor. (8-11, holotype; Gorochov, 1992); **13-15.** *M. anisyutkini* sp. n.; **16.** *M. a. longicauda* subsp. n. Genitalia from above (1, 5, 8, 13), from below (2, 6, 9, 14), and from side (3, 7, 10, 12, 15, 16) (5-7, 12-16, only distal half); spermatophore from side (4, 11).

***Mistshenkoana anisyutkini longicauda* subsp. n.**
(Figs XVI: 16)

Holotype. ♂, **E. Thailand:** prov. Trat, Chang I. in Siam bay, primary forest on low mountains near sea, 5-20.XI.2000, A. Gorochov & L. Anisyutkin (ZIAS).

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

Description. Male (holotype). Very similar to that of nominotypical subspecies, but median ocellus distinct, area between rostral apex and fore halves of eyes slightly darkened (brown), and hind epiphallic lobes with somewhat narrower and slightly longer lobe-like processes (Fig. XVI: 16).

Female. Similar to male, but darkening on fore part of head indistinct. Ovipositor clearly longer

than hind femur (in *M. a. anisyutkini*, shorter than hind femur).

Length (in mm). Body: ♂ 11.5, ♀ 12.5-13.5; body with wings: ♂ 17.5, ♀ 21.5-23.5; pronotum: ♂ 1.8, ♀ 2.3-2.5; tegmina: ♂ 11, ♀ 13.5-15; hind femora: ♂ 8.4, ♀ 9.8-10.2; ovipositor 11-11.6.

***Mistshenkoana buonluoi* sp. n.**
(Fig. XV: 1)

Holotype. ♀, **S. Vietnam,** prov. Gia Lai, 20 km N of town Kannack, primary forest near vill. Buon Luoi, 700-800 m, 24-30.IV.1995, A. Gorochov (ZIAS).

Description. Female (holotype). Coloration light reddish brown with dark brown rostrum of head and area between fore halves of eyes, darkish median spot on hind part of head dorsum connected with previous darkening by short darkish stripe, darkened medial parts of scapes, slightly darkened some parts of labrum and areas around crossveins in distal half of tegminal dorsal part and in exposed part of hind wings (tegminal veins greyish brown; membranes of tegminal dorsal part with greyish tinge), and darkish longitudinal row of sparse dots on dorsal surface of hind femora. Ocelli small (smaller than areas between them). Fore tibiae almost as in *M. kongtumensis*. Hind wings distinctly longer than tegmina (as in *M. anisyutkini*). Ovipositor and hind femora of almost equal length.

Male unknown.

Length (in mm). Body 13; body with wings 18; pronotum 2.2; tegmina 11.5; hind femora 8.6; ovipositor 8.5.

Comparison. The new species is similar to *M. kongtumensis*, *M. belokobylskiji*, *M. nhachangi*, and *M. anisyutkini* in general appearance, but differs in the characteristic coloration of head (with dark rostrum) and the very uniform coloration of hind tibiae.

Mistshenkoana ?bilineata (Chopard, 1954)
(Figs XV: 5-7; XVII, 1-8)

Material examined. Indonesia: 1 ♂, "Java occident., Pengalengan, 4000, 1893", H. Fruhstorfer (MIZP); 1 ♂, "Java", H. Fruhstorfer (ZIAS); 1 ♂, "Sumatra, Soekaranda", H. Dohrn (MIZP). *Malaysia*: 4 ♂, 1 ♀, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E", collected by Rothamsted light traps or by I. Sivec, II-VI.1994 (ZIAS).

Note. The male genitalia of this species described from Java (Chopard, 1954b) are very insufficiently studied up to now; thus, my determination of these specimens is questionable. The specimens from Sumatra and Malacca are rather diverse, but they have insignificant distinctions from Javanese ones. The first specimens are light brown with the following marks: head dorsum with brown ornament almost as in Fig. I: 4, but often this ornament with light fore part (between fore halves of eyes), sometimes indistinct or with darkening between ocelli; pronotal disc brown or almost dark brown with a pair of rather large light spots near middle of disc and sometimes with small lightish median one near fore edge of disc; pronotal lateral lobes with characteristic brown, dark brown, and yellowish spots (Figs XV: 5, 7); femora with darkish lines along both ventral keels, dorsal inner edge of fore femora, dorsal outer edge of middle femora, and outer and dorsal surfaces of hind femora (latter line interrupted or almost indistinct; outer surface of

hind femora often also with slight darkish reticular ornament); tibiae with slightly darkened dorsal surface (hind tibia also with darkish bases of spines and spots around them); tegmina with not large dark brown spot at base and almost identical (light brown) coloration of majority veins and cell membranes; in male, some crossveins of lateral tegminal part and proximal half of dorsal tegminal part hardly lighter than cell membranes, but in female, majority of tegminal crossveins and a few spots at tegminal base almost whitish. Head of these specimens is with rather large ocelli (lateral ones slightly longer than area between lateral and median ocelli); their fore tibiae are similar to those in Fig. I: 3, but inner tympanum is distinctly larger; male anal and genital plates are almost as in Figs XV: 16, 17; male genitalia are as in Figs XVII: 1-5 (in male from Sumatra, spermatophore sac and guiding rod moved backwards, and ectoparameres somewhat deformed).

The Javanese males differ from previous ones in the presence of darkening between fore halves of eyes, between ocelli, and on rostrum (dark ornament behind this darkening almost indistinct), as well as almost uniformly light brown legs, lighter (whitish or rosy) tegminal crossveins, and the male genitalia having more convex lateral edges of hind epiphallic notch and slightly different shape of mold of spermatophore attachment plate (Figs XVII: 6-8). However, this material is insufficient for establishing of subspecies status for these forms (one of Javanese males is without head, and another one without abdomen). These specimens are similar to *M. taciturnus*, but the latter species has almost uniform coloration of head and pronotum (see Ingrisch, 2005). However, it is possible that these differences are a result of individual variability of the same species.

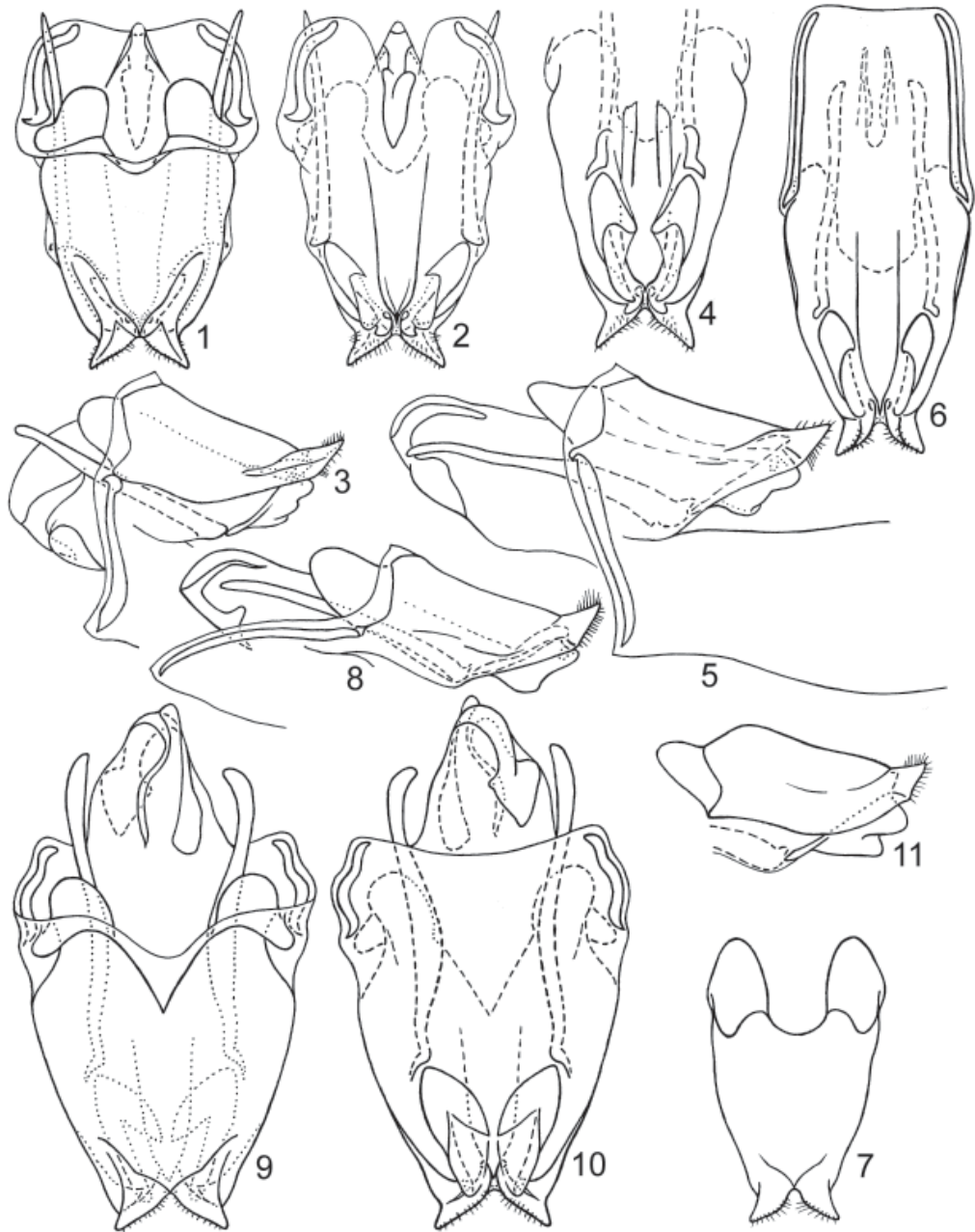
Length (in mm). Body: ♂ 12.5-14.5, ♀ 13; body with wings: ♂ 18-20, ♀ 26; pronotum: ♂ 1.8-2, ♀ 2.6; tegmina: ♂ 12-13.5, ♀ 16.8; hind femora: ♂ 8.8-10, ♀ 11.7 (distal part of ovipositor missing).

Mistshenkoana padangi sp. n.
(Fig. I: 4; XV: 8)

Holotype. ♀, *Indonesia*, W. Sumatra, secondary forest near city Padang, 26.XI.1999, A. Gorochoy (ZIAS). Specimen collected as larva, imago reared IV-V.2000.

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

Description. Female (holotype). Similar to *M. ?bilineata* in structure of body parts and coloration, but characterized by following features: head light brownish with distinct dark brown ornament on dorsum (as in Fig. I: 4); pronotum with dark brown disc and dorsal parts of lateral lobes having distinct light brown spots (more numer-



Figs XVII (1-11). *Mistshenkoana*, ♂. **1-8.** *M. ?bilineata* (Chop.) (1-3, Sumatra; 4, 5, Malacca; 6-8, Java); **9-11.** *M. kisarani* sp. n. Genitalia from above (1, 7, 9), from below (2, 4, 6, 10), and from side (3, 5, 8, 11) (2, 10, without valves; 4, 11, only distal half; 7, only epiphallus).

ous than in *M. ?bilineata*); other parts of pronotal lateral lobes very light and without darkenings along fore and hind edges of these lobes as well as without dark or darkish oblique stripe (characteristic of *M. ?bilineata*) almost in middle part of

their hind half (for comparison, see Figs XV: 5-7 and 8); legs almost uniformly light brownish, but with darkish longitudinal lines on ventral keels and outer surfaces of hind femora, small dark spots on dorsal part of these femora, and darkenings at

base of spines of hind tibiae; tegminal dorsal part rather dark (greyish brown) with somewhat darker longitudinal veins and light (distinctly lighter than cell membranes) crossveins; tegminal lateral part slightly lighter than tegminal dorsal part, with distinctly darker longitudinal veins, dark cell membranes between *Sc* and *R*, and light (lighter than cell membranes) crossveins; ovipositor clearly longer than hind femur.

Variation. Paratype with darkening on apical part of labrum.

Male unknown.

Length (in mm). Body 14-15; body with wings 26-28; pronotum 2.6-2.7; tegmina 17-18; hind femora 11.5-12; ovipositor 13.5-14.5.

Comparison. The new species differs from *M. ?bilineata* in the characteristic coloration of pronotal lateral lobes as well as dark dorsal part of tegmina and cell membranes between *Sc* and *R* in tegminal lateral part. From all other congeners, the new species differs in the following combination of characters: rather large size; comparatively dark and spotted coloration, but with almost uniformly light brown face and light tegminal crossveins; long ovipositor.

Mistshenkoana kisarani sp. n.

(Figs XV: 9; XVII: 9-11)

Holotype. ♂, **Indonesia**, N. Sumatra, "SW of Kisaran, 2°42'18"N, 99°22'42"E", 5.III.1994, I. Sivec (ZIAS).

Description. *Male* (holotype). Similar to *M. ?bilineata* and *M. padangi*, but dark ornament of head very similar to that in Fig. I: 4, pronotal disc brown with light spots and band along hind edge, pronotal lateral lobes as in Fig. XV: 9, fore and middle legs uniformly light brown (hind legs missing), tegmina with whitish crossveins, genitalia with hind epiphallal lobes somewhat shorter than in *M. ?bilineata*, proximal epiphallal notch distinctly angular (rounded in *M. ?bilineata*), and outlines of ectoparameres in profile slightly different from those of *M. ?bilineata* (Figs XVII: 6-8).

Female unknown.

Length (in mm). Body 11; body with wings 17.5; pronotum 1.7; tegmina 11.7.

Comparison. The new species differs from *M. ?bilineata* in the lighter hind half of pronotum, and the above-mentioned characters of male genitalia. From *M. padangi*, it is distinguished by the distinctly lighter coloration of pronotum and tegmina.

Mistshenkoana javae sp. n.

(Figs XV: 2, 18; XVIII: 1-3)

Holotype. M, **Indonesia**, W. Java, 20-25 km SE of city Bogor, env. of vill. Cemande, mts Pangrango, sec-

ondary forest, 1000 m, 27.XI-7.XII.1999, A. Gorochov (ZIAS).

Description. *Male* (holotype). Coloration yellowish with whitish lower half of head (including mouthparts), dark brown rostrum and spot behind ocelli, brown large spots behind eyes, almost dark brown dorsal part of pronotal lateral lobes, brownish scapes, light brownish grey longitudinal lines on hind part of head dorsum (Fig. XV: 2) and small spots and dots between them and on pronotal disc, darkish sparse dots on middle and hind femora as well as larger spots on apex of hind femora and dorsal surface of middle and hind tibiae (1 spot near apex of middle tibiae and 5 spots on hind tibiae), whitish grey tegmina having following marks: light veins (including all crossveins), darkened area between *Sc* and *R*, slightly darkened small areas around crossveins in most part of dorsal part and distal half of lateral part, almost transparent majority of cell membranes between *Sc* branches. Head with rather large ocelli (lateral ones longer than distance between lateral and median ocelli). Fore tibiae similar to those in Fig. XV: 15, but with somewhat larger inner tympanum. Genital plate similar to that in Fig. XV: 17; anal plate and genitalia as in Figs XV: 18; XVIII: 1-3.

Female unknown.

Length (in mm). Body 13; body with wings 19.5; pronotum 1.9; tegmina 12.5; hind femora 9.2.

Comparison. The new species differs from *M. buonluoi* in the dark area between *Sc* and *R* in tegmina, lineated head dorsum, and presence of distinct darkenings on pronotum. From all other congeners, it is distinguished by the characteristic coloration, shape of the male anal plate, and structure of the male genitalia (especially almost straight hind epiphallal lobes in profile and characteristic shape of proximal projection of ectoparameres in profile; Figs XVIII: 3).

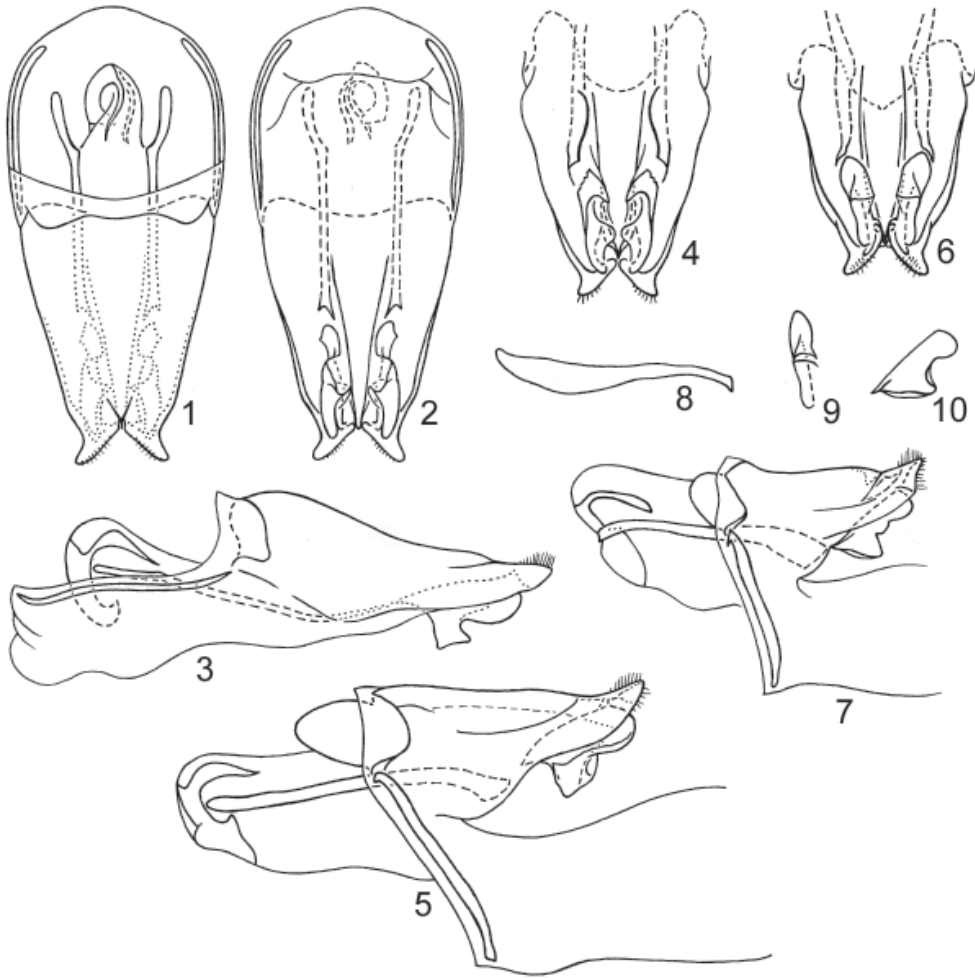
Mistshenkoana aperta sp. n.

(Figs XVIII: 4, 5)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E, leg. Rothamsted l. trap", 12.II.1994 (ZIAS).

Paratypes. **Malaysia**: 2 ♂, 2 ♀, same data as for holotype, but females collected 13.II-10.III.1994 (ZIAS). **Indonesia**: 1 ♀, N. Sumatra, "W of Kisaran, 50 m, 2°42'17"N, 99°22'29"E", 22.II.1994, I. Sivec (ZIAS).

Description. *Male* (holotype). Coloration light brown with dark brown upper part of rostrum and spot behind ocelli (almost as in Fig. XV: 1), brown bands along dorsal edge of pronotal disc and second tarsal segments, darkish upper part of middle tibiae, a row of small spots along dorsal surface of hind femora and tibiae, and somewhat more distinct spots around darkish cross-



Figs XVIII (1-10). *Mistshenkoana*, ♂. 1-3, *M. javae* sp. n.; 4, 5, *M. aperta* sp. n. (holotype); 6-10, *M. ornata* sp. n. (6-8, holotype). Genitalia from above (1), from below (2, 4, 6), and from side (3, 5, 7) (4, 6, only distal half); right endoparamere with apodeme from inner side (8); right ectoparamere from below (9); left ectoparamere from side (10).

veins in medial and distal halves of dorsal tegminal part as well as in lower and distal halves of lateral tegminal part. Ocelli, fore tibiae, and genital plate almost as in *M. javae*, but lateral ocelli shorter (their length almost equal to distance between lateral and median ocelli); anal plate more or less similar to that of *M. kongtumensis*; genitalia as in Figs XVII: 4, 5.

Variation. Head dorsum sometimes with additional darkenings between eyes similar to dark rings of *M. padangi* (Fig. I: 4), but with light hind part of vertex.

Female. Similar to male, but lateral ocelli somewhat smaller (slightly shorter than area between lateral and median ocelli) and spots around

tegminal crossveins less numerous. In Sumatran specimen, spots around crossveins of lateral tegminal part almost indistinct and darkenings on pronotum and tibiae less distinct. Ovipositor hardly shorter than hind femur.

Length (in mm). Body: ♂ 11-12, ♀ 9-11; body with wings: ♂ 17.5-18.5, ♀ 18.5-20; pronotum: ♂ 1.8-1.9, ♀ 1.9-2.1; tegmina: ♂ 11.5-12.2, ♀ 12-13; hind femora: ♂ 8.4-8.6, ♀ 8.5-9.2; ovipositor 8-8.6.

Comparison. The new species differs from *M. buonluoi* in the presence of darkenings on pronotum and absence of darkenings on scapes. From *M. javae*, it differs in the light brown (not whitish) lower part of head, not lined hind part of

vertex, darkish crossveins, and some distinctions in the male genitalia: hind epiphallal lobes slightly shorter and with more convex ventral edge in profile (for comparison, see Figs XVIII: 2, 3 and 4, 5).

Note. The paratype from Sumatra is slightly different in coloration; it is possibly a representative of a separate subspecies, but this material is insufficient for its description.

Mistshenkoana ornata sp. n.
(Figs XV: 3; XVIII: 6-10)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E, leg. Rothamsted light trap", IV-VI.1994 (ZIAS).

Paratypes. 4 ♂, 2 ♀, same data as for holotype, but 1 ♂ and 1 ♀ collected VIII-XII.1993 and 1 ♂, 29-30.III.1994 by I. Sivec (ZIAS).

Description. Male (holotype). Coloration variegated: upper half of head dark brown with brown and light brown marks on fore part as in Fig. XV: 3 and brown indistinct area between hind parts of eyes; lower half of head yellowish (including palpi) with brownish spots on labrum; antennae yellowish with brown proximal part and sparse brownish spots on rest of flagellum; pronotal disc brown with light spots and stripes; pronotal lateral lobes dark brown with yellowish band along ventral edge; legs yellowish with both ventral femoral keels darkened, a few darkish spots on dorsal surface of hind femora and all tibiae (these spots large in hind legs and small in other legs), dark apical part of hind femora and spines of hind tibiae, darkish longitudinal line on outer surface of hind femora, darkened second tarsal segments of all legs and third ones of hind legs; tegmina brownish grey with lighter crossveins and small spots around them, brown and dark brown longitudinal veins, and almost transparent small area in ventroproximal corner of lateral part; abdomen and venter of thorax yellowish with more or less darkened distal abdominal tergites. Length of lateral ocelli almost equal to distance between lateral and median ocelli. Fore tibiae more or less similar to those in Fig. XV: 15, but inner tympanum almost twice larger and dorsal part of tibia near tympanum more strongly inflated. Anal and genital plates more or less similar to those in Figs XV: 16, 17; genitalia as in Figs XVIII: 6-8 (left and right endoparameres and their apodemes slightly asymmetrical).

Variation. Sometimes coloration somewhat lighter or darker, genital plate with darkening on distal part, tegminal membranes dark with whitish crossveins and very narrow areas around them, and ectoparameres slightly different in shape (for comparison, see Figs XVIII: 6, 7 and 9, 10).

Female. Similar to male, but usually larger. Ovipositor somewhat longer than hind femur.

Length (in mm). Body: ♂ 10-11.5, ♀ 10.5-13; body with wings: ♂ 18-19, ♀ 22.5-23.5; pronotum: ♂ 1.6-1.7, ♀ 2.1-2.2; tegmina: ♂ 11.8-12.6, ♀ 14.5-15.2; hind femora: ♂ 8-8.5, ♀ 10-10.3; ovipositor 11.5-12.

Comparison. The new species is somewhat similar to *M. angustifrons* in the coloration and to *M. aperta* in the shape of hind epiphallal lobes viewed from above or below, but it differs from *M. angustifrons* in the presense of wide light band on epicranium along clypeal suture, and from *M. aperta*, in the shape of hind epiphallal lobes (and ectoparameres) in profile (the lobe has a shallow concavity under its apex; in *M. aperta*, this concavity is absent) and characteristic variegated coloration. This coloration well isolates the new species also from all other congeners.

Mistshenkoana beybienkoi Gorochoy, 1990
(Figs XIX: 1-4)

Holotype. ♂, **Indonesia**, Komodo I. (between Sumbawa and Flores), near bank of sea, 22.VIII.1962, I. Darevski (ZIAS).

Additional material examined. 2 ♂ and 3 ♀ (paratypes), same data as for holotype, but 5-22.VIII.1962 (ZIAS).

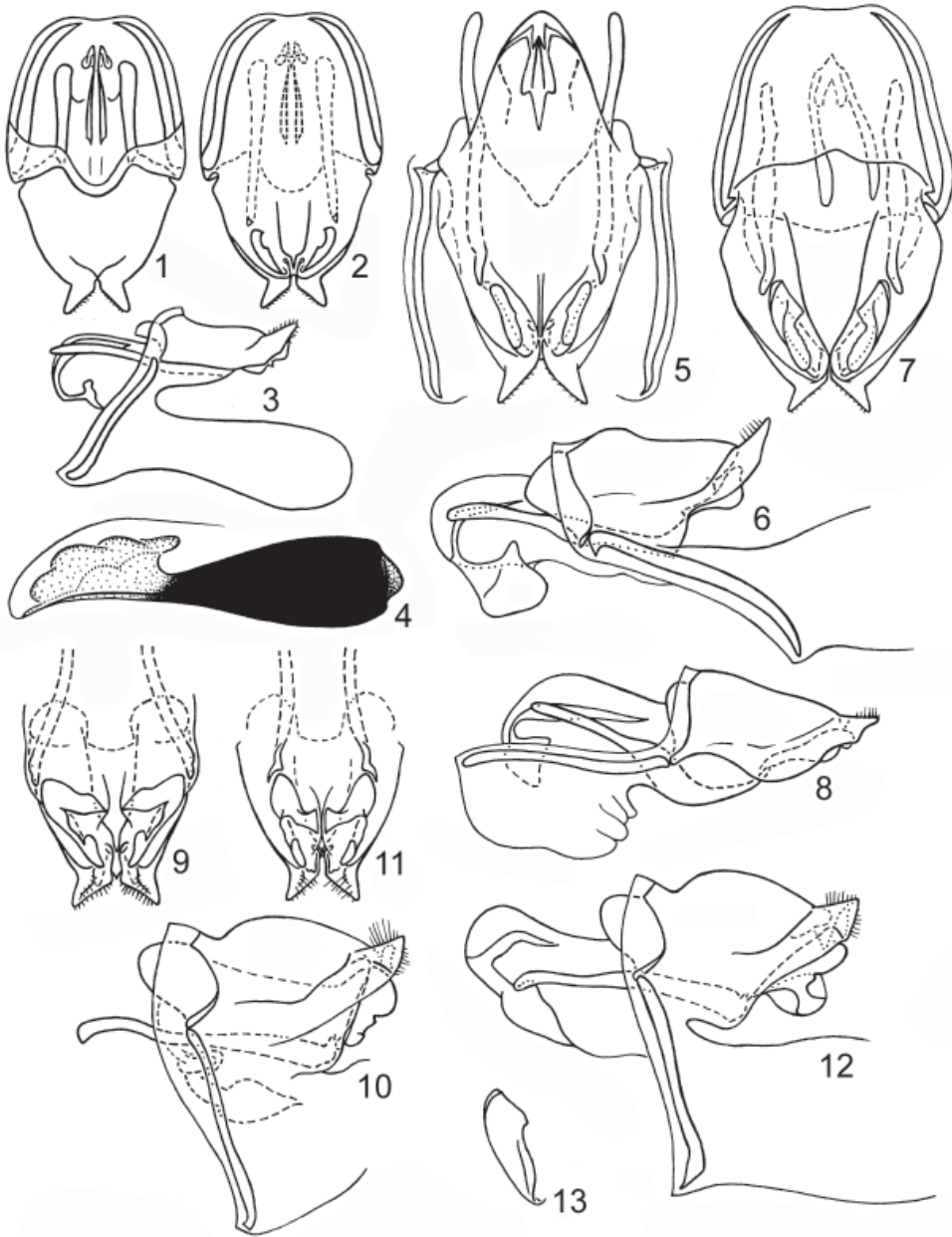
Note. This species is characterized by the following features: coloration uniformly light brownish or yellowish, but with brown longitudinal irregular stripe on dorsal surface of hind tibiae, whitish tegminal crossveins, and yellowish (sometimes indistinct) or almost whitish longitudinal stripes along dorsal edge of pronotal lateral lobes; lateral ocelli somewhat longer than distance between lateral and median ocelli; fore tibiae, male anal and genital plates more or less similar to those in Figs XV: 15-17; male genitalia and spermatophore as in Fig. XIX: 1-4; ovipositor almost as long as hind femur. All these specimens were determined by Bey-Bienko (1966) as "*Aphonooides gracilis*" (the differences between *M. gracilis* and *M. beybienkoi* will be mentioned below in the note about *M. gracilis*).

Length (in mm). Body: ♂ 12-13, ♀ 12-14; body with wings: ♂ 17-19, ♀ 22-24; pronotum: ♂ 1.9-2, ♀ 2.2-2.4; tegmina: ♂ 11-12, ♀ 14-15; hind femora: ♂ 8-9, ♀ 9-10; ovipositor 9-10.

Mistshenkoana? chopardi (Bey-Bienko, 1966)
(Fig. XV: 10)

Holotype. ♀, **Indonesia**, Komodo I. (between Sumbawa and Flores), near bank of sea, 19.VIII.1962, I. Darevski (ZIAS).

Note. The holotype of *M. chopardi* is similar to the females of *M. beybienkoi*, but it is clearly distinguished from them by the coloration of tegminal crossveins identical with that of tegmi-



Figs XIX (1-12). *Mistshenkoana*, ♂. **1-4.** *M. beybienkoi* Gor. (holotype; Gorochov, 1990); **5, 6.** *M. caudata* (B.-Bien.); **7, 8.** *M. sumbawae* sp. n.; **9-12.** *M. nigrifrons* sp. n. (9, 10, holotype); **13.** *M. abbreviata* sp. n. Genitalia from above (1), from below (2, 5, 7, 9, 11), and from side (3, 6, 8, 10, 12) (2, 5, without valves; 9, 11, only distal half); spermatophore from side (4); right ectoparamere from below (13).

nal membranes (not whitish), presence of darkish lines along both ventral keels of hind femora, absence of distinct darkenings on hind tibiae, somewhat shorter fore tibiae (Fig. XV: 10), and shorter ovipositor, which is slightly shorter than

hind femur. This specimen is provided with the additional label: “*Aphonoides* n. sp. L. Chopard det.”.

It is probable that the original description of this species (Bey-Bienko, 1966) was mainly

based on its paratype, a female (with the same data) distinguished from the holotype by the head with darkened antennal flagellum and spot between eyes, darkish marks on pronotal disc (Fig. XV: 11), and whitish tegminal crossveins. It is possible that this female belongs to another species somewhat similar to *M. ?bilineata*, *M. padangi*, and *M. kisarani* in the coloration of pronotum and size of ocelli, but distinguished from them in the coloration of head (especially in the darkened antennal flagellum).

Length of holotype (in mm). Body 14; body with wings 22.5; pronotum 2; tegmina 15.3; hind femora 9.4.

Mistshenkoana caudata (Bey-Bienko, 1966)
(Figs XV: 12, 13; XIX: 5, 6)

Holotype. ♀, **Indonesia**, Komodo I. (between Sumbawa and Flores), near bank of sea, 22.VIII.1962, I. Darevski (ZIAS).

Other material examined. **Indonesia**: 2 ♂, Lombok I. (near Sumbawa), "Sunda-Exp. Rensch, O.-Lombok, Sweia, 3-450 m", 22-27.III.1927 (MNHU and ZIAS).

Note. The holotype of this species is somewhat similar to *M. ?bilineata*, *M. padangi*, *M. kisarani*, and the paratype of *M. ?chopardi* in the coloration of pronotum (Fig. XV: 12, 13) and light tegminal crossveins, but it is clearly distinguished from all of them by the distinctly smaller ocelli (lateral ones slightly shorter than distance between lateral and median ocelli) as well as from each of them, by the almost not spotted and more or less light head (including all parts of antennae), comparatively light general coloration of pronotum, light legs with distinct darkenings only on hind legs (femora with darkish sparse dots and outer longitudinal line; dorsal surface of tibiae partly darkened), light brown tegmina (lateral part hardly lighter than dorsal one; crossveins distinctly lighter than tegminal cell membranes) with darkish narrow humeral stripe running from almost middle part of tegmina to their apex, fore tibiae almost as in *M. kongtumensis*, or comparatively large size (almost as in *M. padangi*, including the length of ovipositor, which is clearly longer than hind femur).

Description of male (nov.). Very similar to female in shape of body parts and coloration, but slightly smaller, ocelli somewhat larger (length of lateral ocelli almost equal to distance between lateral and median ocelli or slightly greater), hind femora with only darkish dots on ventral keels, dorsal part of tegmina hardly darker, and dark humeral stripe sometimes wider (occupying narrow lateral stripe of dorsal tegminal part) and running from base to apex of tegmina. Abdomen and ventral part of thorax without darkenings; anal and genital plate rather similar to those of *M. kongtumensis*; genitalia as in Figs XIX: 5, 6.

Length (in mm). Body: ♂ 15-15.5, ♀ 15.5; body with wings: ♂ 22.5-23.5, ♀ 26.5; pronotum: ♂ 2.4-2.5, ♀ 2.9; tegmina: ♂ 14.8-15.2, ♀ 17.5; hind femora: ♂ 10.3-10.6, ♀ 12.3; ovipositor 14.5.

Mistshenkoana sumbawae sp. n.

(Figs XV: 19; XIX: 7, 8)

Holotype. ♂, **Indonesia**, Sumbawa I., "Sunda-Exp. Rensch, Sumbawa, Batu Dulang, 800-1200 m", 10-15.V.1927 (MNHU).

Paratype. ♀, same data as for holotype (MNHU).

Description. *Male* (holotype). Coloration uniformly yellowish, without any darkenings, but with semitransparent cell membranes in tegminal lateral part (coloration of all tegminal veins and crossveins almost identical to that of cell membranes in dorsal tegminal part). Lateral ocelli large, slightly longer than distance between lateral and median ocelli. Fore tibiae with very large inner tympanum (as in Fig. XV: 19). Anal and genital plates more or less similar to those of *M. kongtumensis*; genitalia as in Figs XIX: 7, 8.

Female. Similar to male, but coloration of head dorsum and all tegminal veins (including crossveins) hardly darker (light brownish). Ovipositor slightly shorter than hind femur.

Length (in mm). Body: ♂ 11.7, ♀ 13; body with wings: ♂ 17.5, ♀ 21; pronotum: ♂ 1.8, ♀ 2.1; tegmina: ♂ 11.5, ♀ 14; hind femora: ♂ 7.5, ♀ 8.7; ovipositor 7.8.

Comparison. The new species is very similar to the holotype of *M. chopardi*, but it is distinguished by the uniform coloration of hind femora and distinctly larger inner tympanum (for comparison, see Figs XV: 10 and 19). There is also similarity with *M. beybienkoi*, but *M. sumbawae* differs in the uniform coloration of hind tibiae, not whitish tegminal crossveins, and somewhat different shape of hind epiphallic lobes and ectoparameres (see Figs XIX: 2, 3 and 7, 8).

Mistshenkoana abbreviata sp. n.

(Fig. XIX: 13)

Holotype. ♂, **Indonesia**, Sumbawa I., "Sunda-Exp. Rensch, Sumbawa, Batu Dulang", 10-15.V.1927 (MNHU).

Description. *Male* (holotype). Similar to *M. sumbawae*, but head and pronotum light brown with reddish tinge, tegminal longitudinal veins brown, tegminal crossveins dark brown, cell membranes of tegmina with dark narrow spots around some of crossveins, ocelli small and almost indistinct, inner tympanum hardly smaller, hind wings and genital plate shortened (hind wings slightly longer than tegmina: length of exposed part of hind wings 1 mm; genital plate slightly shorter than that of *M. kongtumensis*). Fore tibiae, anal plate, and genitalia almost as in

M. sumbawae, but there are small differences in shape of ectoparameres (for comparison, see Figs XIX: 7 and 13).

Female unknown.

Length (in mm). Body 11; body with wings 12.5; pronotum 2; tegmina 8.7; hind femora 7.5.

Comparison. The distinctions from *M. sumbawae* are listed above. From all other similar species, *M. abbreviata* is distinguished by the characters of coloration, shortened hind wings, and shape of male genital structures.

***Mistshenkoana nigrifrons* sp. n.**
(Figs XIX: 9-12)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E, leg. Rothamsted l. trap", 12.II.1994 (ZIAS).

Paratype. ♂, **Indonesia**, N. Sumatra, "Sitahoane, Parapat, 1400 m", 1-2.III.1994, I. Sivec (ZIAS).

Description. Male (holotype). Coloration of head dark brown with yellowish mouthparts (including clypeus), lower part of genae (including areas under eyes), and antennal flagellum, brown two proximal antennal segments, light brown small spots before lateral ocelli, and larger spots on hind half of vertex; pronotum brown with large light brown spots on disc and yellowish lower half of lateral lobes; legs uniformly light brown or yellowish (without distinct darkenings); tegmina brownish grey with darker (brown) longitudinal veins and very light (almost whitish) crossveins; venter of thorax and abdomen (including cerci) yellowish; abdominal dorsum brownish. Lateral ocelli large, distinctly longer than area between lateral and median ocelli. Fore tibiae almost as in Fig. XV: 19. Anal and genital plates more or less similar to those of *M. kongtumensis*; genitalia as in Figs XIX: 9, 10.

Variation. Paratype with darker upper half of pronotum (dark brown) and somewhat smaller light spots on pronotal disc; its genitalia slightly different from those of holotype in outlines of ectoparameres (Figs XIX: 11, 12), but as a possible result of their deformation in holotype (its spermatophore sac with mold of spermatophore attachment plate and endoparameres moved backwards).

Female unknown.

Length (in mm). Body 10.5-11.5; body with wings 16-17.5; pronotum 1.6-1.7; tegmina 10.8-11.8; hind femora 7.6.

Comparison. The new species is very similar to *M. angustifrons* from Borneo, but it differs from the latter species in the presence of light spots on hind part of vertex, lighter tegmina, absence of any darkenings on distal part of hind tibiae, and epiphallus strongly convex in profile (Figs XIX: 10, 12) (in *M. angustifrons*, epiphallus clearly concave in profile; Chopard, 1930:

Fig. 72).

Note. *M. nigrifrons* was possibly recorded from Singapore as *M. angustifrons* by Chopard (1969).

***Mistshenkoana ?gracilis* (Chopard, 1925)**
(Figs XX: 1-3)

Material examined. Philippines: 1 ♂, Luzon, Mt. Makiling, C. Baker (BMNH).

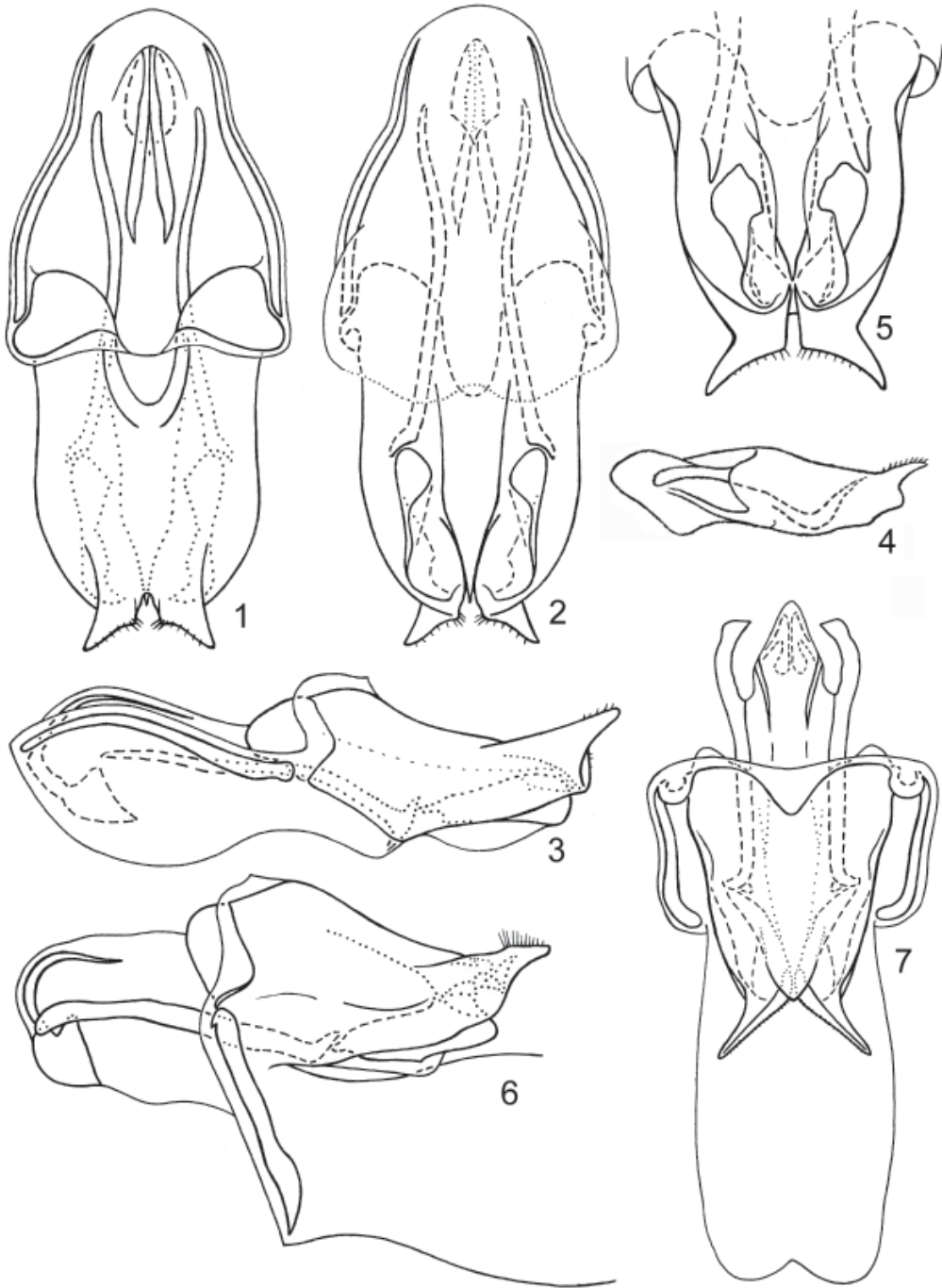
Note. This specimen is determined by Chopard as "*Aphonoides gracilis*". Moreover, it was collected in the same locality (Mt. Makiling) as some syntypes of *M. gracilis* (Chopard, 1925: p. 329). However, the rest of its syntypes originates from some other islands of the Philippines. Coloration of the examined male is very similar to that given in Chopard's description: very light brown (almost uniform) with semitransparent tegminal lateral part and weakly distinct darkish dots on distal part of outer ventral keel of hind femora. But there are some remarkable characters not mentioned by Chopard: dorsal surface of hind tibiae with large dark spot at middle part; tegmina with distinct darkish humeral stripe running from their base to their distal part; longitudinal veins of tegmina slightly darker (brown and light brown) than cell membranes; coloration of tegminal crossveins almost identical to that of nearest membranes, but between *Sc* and *R*, these crossveins and small areas around them distinctly rosy. The external characters of this male do not contradict to Chopard's description: ocelli comparatively large (length of lateral ones almost equal to distance between lateral and median ocelli); inner part of fore tibiae as in Fig. XV: 15, but tympanum somewhat larger; anal and genital plates similar to those of *M. kongtumensis*, but distance between tubercles on proximal part of anal plate hardly greater; genitalia as in Figs XX: 1-3 [shape of hind epiphallic lobes in profile very similar to that of Chopard's syntype (see Figs XX: 3 and 4) and clearly different from that of all other species figured here].

Length (in mm), ♂. Body 13.5; body with wings 21; pronotum 2.3; tegmina 14; hind femora 10.5.

***Mistshenkoana ?yaeyamensis* (Oshiro, 1998)**
(Figs XX: 5, 6)

Material examined. Japan: 1 ♂, Ryukyu, pref. Okinawa, Ishigaki I., 14.X.1999, S. Belokobylskij (ZIAS).

Note. This species was described from Yonaguni I. (Ryukyu). Later it was synonymized with *M. gracilis* by Ichikawa et al. (2000). However, the specimen examined by me has the genitalia with the hind epiphallic lobes in profile somewhat different from those figured by Chopard in the original description of *M. gracilis* and from those of the specimen determined by me as *M.*



Figs XX (1-7). *Mistshenkoana*, ♂. 1-3, *M. ?gracilis* (Chop.); 4, *M. gracilis* (syntype; Chopard, 1925); 5, 6, *M. ?yaeyamensis* (Oshiro); 7, *M. borneo* sp. n. Genitalia from above (1, 7), from below (2, 5), and from side (3, 4, 6) (5, only distal half).

?gracilis (for comparison, see Figs XX: 3, 4 and 6). Moreover, the outlines of these lobes (viewed from above or below) in the male from Ishigaki I. and in the specimen from Japan studied by Ichikawa et al. (2000: Fig. 12g) are more or less similar, but they are clearly different from those of *M. ?gracilis* (see Figs XX: 2 and 5).

These data allow me to assume that *M. yaeyamensis* is a distinct species similar to the latter species, but distinguished from it by the following characters of coloration: head with brown transverse spot between hind halves of eyes and light brown hind part of vertex; pronotum with brown median and hind parts of disc, sparse dots along fore edge of lateral lobes, and a group of dots near hind ventral corner of these lobes; all legs with sparse darkish dots, and hind tibiae with 3 distinct dark brown spots on dorsal surface; tegminal dorsal part brownish grey with brown longitudinal veins and very light crossveins; tegminal lateral part almost transparent with darkish narrow humeral stripe, wider yellowish stripe under it (mainly between *Sc* and *R*), brownish longitudinal veins, and whitish crossveins.

Length (in mm), ♂. Body 12.2; body with wings 18.3; pronotum 2.1; tegmina 12; hind femora 9.3.

Mistshenkoana pangrango sp. n.
(Figs XXI: 1-3)

Holotype. ♂, **Indonesia**, W. Java, 20-25 km SE of city Bogor, Mts Pangrango, 1000 m, secondary forest near vill. Cemande, 27.XI-7.XII.1999, A. Gorochoy (ZIAS).

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

Description. Male (holotype). Coloration light brown, more or less uniform, but with following darkening: distal part of antennal flagellum darkish; pronotum with dark brown bands along lateral edges of disc; spines of hind tibiae with slightly darkened bases; dorsal tegminal part brownish grey (longitudinal veins and part of crossveins also brownish grey) with darker (almost dark brown) crossveins in distal half and not large spots around them; lateral tegminal part with brown branches of *Sc*, greyish crossveins near costal edge and a few small spots around some of them near apex of this part (cell membranes of this part almost transparent). Head with small ocelli (lateral ones shorter than areas between ocelli). Fore tibiae as in Fig. XV: 15, but uinner tympanum hardly larger. Anal and genital plates similar to those of *M. kongtumensis*; genitalia as in Figs XXI: 1-3.

Variation. Paratype with spots in dorsal tegminal part less numerous, without spots and with not darkened veins and crossveins in lateral tegminal part, and with more distinct darkenings at bases of spines on hind tibiae.

Female. Similar to male, but larger; coloration more similar to that of holotype. Ovipositor distinctly longer than hind femur.

Length (in mm). Body: ♂ 12.5-13, ♀ 14.5; body with wings: ♂ 18-19, ♀ 23.5; pronotum: ♂ 1.9-2, ♀ 2.3; tegmina: ♂ 12-12.5, ♀ 15.7; hind femora: ♂ 9-9.3, ♀ 10.5; ovipositor 12.4.

Comparison. The new species is more or less similar to *M. caudata*, *M. ?gracilis* and *M. ?yaeyamensis* in the narrow and long hind epiphallic lobes of the male genitalia, but it differs from the first species in the smaller size, more uniform coloration of hind tibiae, and shape of ectoparameres, from the second and third species, in the spotted tegmina and shape of hind epiphallic lobes in profile (with more sloping projection on their lower edge).

Mistshenkoana tembelingi sp.n.
(Figs XXI: 4, 5)

Holotype. ♂, **Malaysia**, Pahang (S. Malacca), env. of Nat. park Taman Negara, primary forest near vill. Kuala Tahan on Tembeling River, 12-16.VII.1996, A. Gorochoy (ZIAS).

Description. Male (holotype). Coloration very light brown, rather uniform, but with semitransparent cell membranes in tegmina, hardly darker (light brown or greyish) longitudinal veins in dorsal tegminal part and near upper edge of lateral tegminal part, darkish crossveins in apical and medial areas of dorsal tegminal part and not large spots around them, slightly darkened base of spines of hind tibiae and dorsal part of abdominal apex. Ocelli medium-sized (length of lateral ones almost equal to distance between lateral and median ocelli). Fore tibiae, anal and genital plates almost as in *M. pangrango*; genitalia as in Figs XXI: 4, 5.

Female unknown.

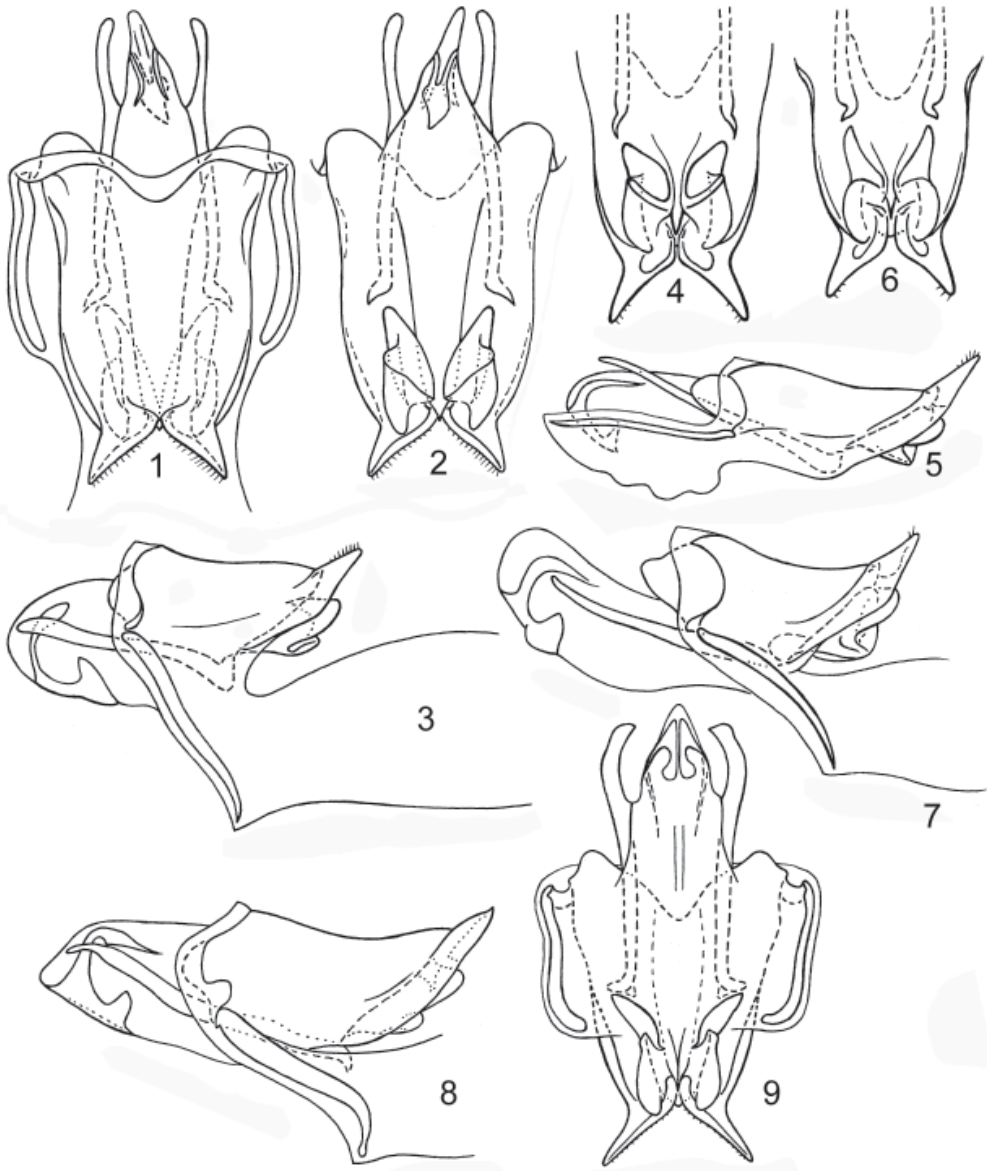
Length (in mm). Body 11.3; body with wings 16; pronotum 1.8; tegmina 11; hind femora 8.2.

Comparison. The new species is similar to *M. pangrango*, but the pronotum of *M. tembelingi* is without large darkenings, and its male genitalia are with distinctly narrower and longer hind epiphallic lobes and with the slightly more sloping lower projection of these lobes. From all other similar species, *M. tembelingi* differs in the rather uniform coloration (but with spotted tegmina) and characteristic male genitalia.

Mistshenkoana hulu sp. n.
(Figs XXI: 6, 7)

Holotype. ♂, **Malaysia**, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N, 101°26'21"E, 250 m, leg. Rothamsted light trap", VIII-XII.1993 (ZIAS).

Paratypes. 4 ♂, 3 ♀, same data as for holotype, but II-VI.1994 (1 ♂ collected by I. Sivec) (ZIAS).



Figs XXI (1-9). *Misthenkoana*, ♂. 1-3, *M. pangrango* sp. n. (holotype); 4, 5, *M. tembelingi* sp. n.; 6, 7, *M. hulu* sp. n. (holotype); 8, 9, *M. borneo* sp. n. Genitalia from above (1), from below (2, 4, 6, 9), and from side (3, 5, 7, 8) (2, without rami and valves; 4, 6, only distal half; 9, without valves).

Description. Male (holotype). Very similar to *M. tembelingi*, but with some differences: upper part of both head and pronotum slightly darker (light brown); lower part of head, antennae, lower half of pronotal lateral lobes, fore and middle legs, venter of thorax, and cerci yellowish; tegmina with darkish spots around almost all cross-veins in hind half of dorsal part and in apical

area of lateral part; genitalia with hardly wider and shorter hind epiphallic lobes viewed from above or below (Fig. XXI: 6), slightly less sloping lower projection of these lobes (Fig. XXI: 7), distinctly wider ventral sclerotized stripes along medial edges of hind epiphallic notch, and longer proximal part of ectoparameres (for comparison, see Figs XXI: 4 and 6).

Variation. Sometimes hind femora with darkish dots, and dorsal surface of hind tibiae with slightly darkened spots.

Female. Similar to male, but coloration of lower half of pronotal lobes almost as that of pronotal disc, and spots on tegmina less numerous (as in male of *M. tembelingi*). Ovipositor and hind femora of almost equal length.

Length (in mm). Body: ♂ 11-12, ♀ 12-13; body with wings: ♂ 18-19, ♀ 19.5-21; pronotum: ♂ 1.7-1.9, ♀ 2-2.2; tegmina: ♂ 11.5-12, ♀ 13-13.5; hind femora: ♂ 8.5-9, ♀ 9-9.5; ovipositor 9-9.5.

Comparison. The distinctions from *M. tembelingi* are listed above. From *M. pangrango*, the new species differs in the absence of distinct darkenings on pronotum and almost concave middle part of epiphallal dorsal edge in profile (in *M. pangrango*, this epiphallal part convex in profile; for comparison, see Figs XXI: 3 and 7).

***Mistshenkoana borneo* sp. n.**
(Figs XX: 7; XV: 20; XXI: 8, 9)

Holotype. ♂, **Malaysia**, Sarawak (N. Borneo), "4th Division, Baram District, Gunong Mulu National Park, 4°3'N / 115°56'E", "malaise in mixed dipterocarp forest, 450 m", 13-18.III.1978, N. Collins (BMNH).

Paratypes. **Malaysia:** 1 ♀, same data as for holotype, but "malaise trap in limestone forest, Melinau Gorge", 8-21.III.1978 (BMNH); 1 ♀, Sabah (N. Borneo), "Tawai Plat. 1300 ft, 8 m, S. Telupid", 8.IX.1977 (ZIAS).

Description. Male (holotype). Coloration uniformly light brown with tegminal veins and crossveins slightly darker than membranes of dorsal part, semitransparent membranes of tegminal lateral part, rather small darkish spots around crossveins in apical and medial areas of hind half of dorsal tegminal part, and hardly darkened both base of spines of hind tibiae and dorsal part of abdomen. Ocelli medium-sized (length of lateral ones almost equal to distance between lateral and median ocelli). Fore tibiae more or less similar to those in Fig. XV: 15, but inner tympanum distinctly larger. Anal plate as in Fig. XV: 20; genital plate similar to that of *M. kongtumensis*, but without distinct ventral concavity; genitalia as in Figs XX: 7; XXI: 8, 9.

Female. Similar to male, but bases of spines of hind tibiae somewhat darker, and lateral ocelli slightly shorter than distance between lateral and median ocelli. Ovipositor slightly shorter than hind femur.

Length (in mm). Body: ♂ 11.5, ♀ 12-13; body with wings: ♂ 18, ♀ 20.5-21; pronotum: ♂ 1.9, ♀ 2.2-2.3; tegmina: ♂ 11.5, ♀ 13.2-13.5; hind femora: ♂ 8, ♀ 9.5-9.7; ovipositor 9-9.2.

Comparison. *M. borneo* is clearly distinguished from all congeners by the following combination of characters: almost uniform coloration with spotted tegmina, rather large inner tympanum, not

bifurcate median projection on proximal part of male anal plate, and very narrow and long hind epiphallal lobes viewed from above or below.

***Mistshenkoana proxima* sp. n.**

Holotype. ♀, **Malaysia**, Banggi I. (between N. Borneo and S. Palawan), "Banguey, b. Borneo", O. Staudinger (ZIAS).

Description. Female (holotype). Very similar to *M. borneo*, but distinguished by following characters: head dorsum and pronotal disc with hardly distinct darkish longitudinal stripes and spots; tegmina with more numerous and distinct darkish spots on hind half of dorsal part; fore tibiae slightly shorter and with somewhat smaller inner tympanum (they are similar to those in Fig. XV: 10, but with slightly larger tympanum); ovipositor distinctly longer than hind femur.

Male unknown.

Length (in mm). Body 13; body with wings 19.7; pronotum 2.2; tegmina 12; hind femora 9.2; ovipositor 10.3.

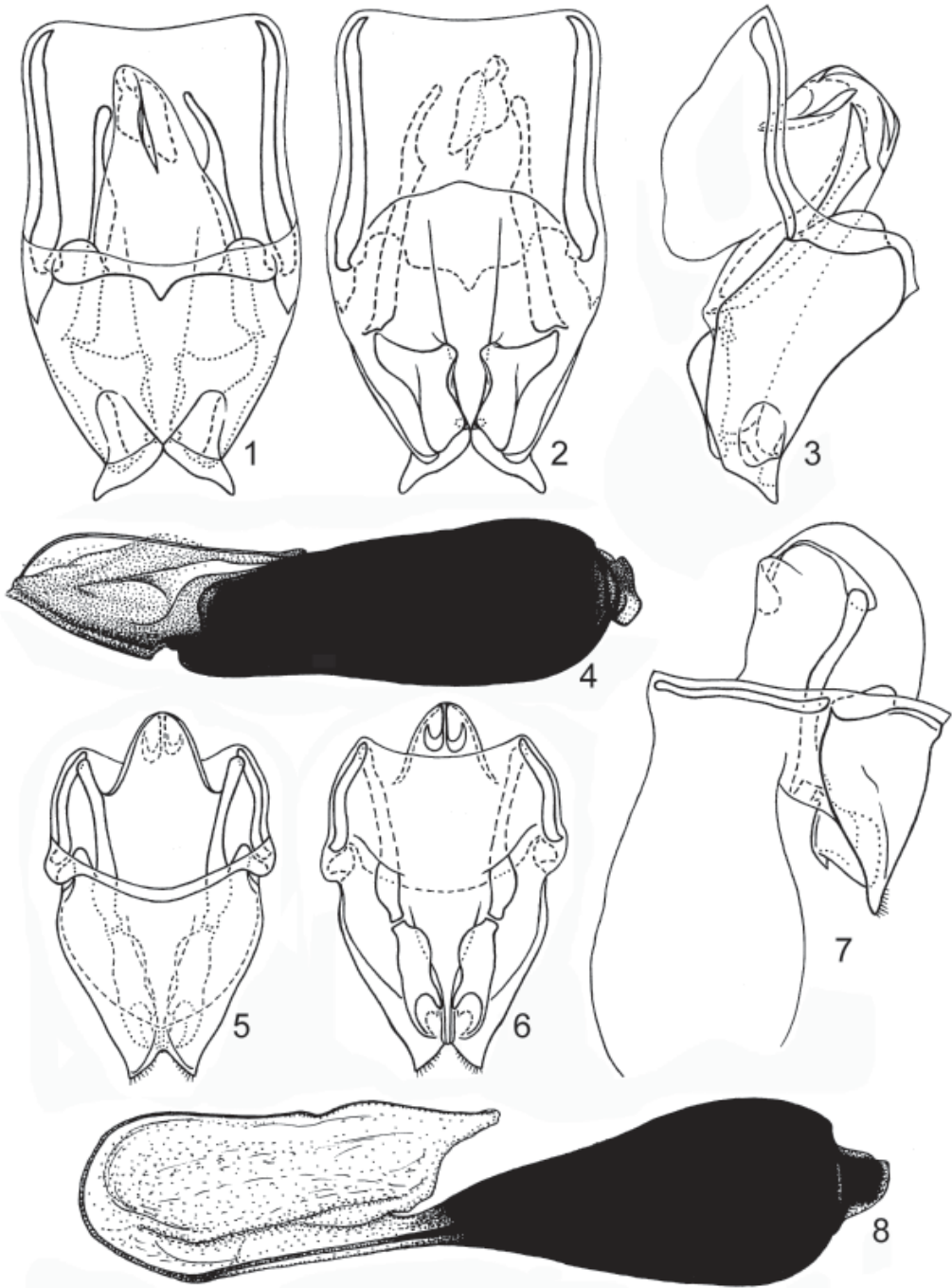
Comparison. The distinctions between the new species and *M. borneo* are listed above. From all other similar species, *M. proxima* differs in the almost uniform coloration (but with spotted tegmina, more spotted than in *M. kongtumensis*, *M. belokobylskiji*, *M. anisyutkini*, *M. nhachangi*, *M. tembelingi*, and *M. hulu*; in these species, darkish spots are situated along medial edge of distal half of tegmina and in apical area of their dorsal part, but in *M. proxima*, they occupy distal half of tegminal dorsal part almost completely) and long ovipositor, which is distinctly longer than hind femur (in majority of above-mentioned species, ovipositor shorter).

***Mistshenkoana discreta* sp. n.**
(Figs XXII: 1-4)

Holotype. ♂, **Malaysia**, Sabah (N. Borneo), "Tawai Plat. 1300 ft, 8 m, S. Telupid", 8.IX.1977 (BMNH).

Paratype. ♀, same data as for holotype (BMNH).

Description. Male (holotype). Coloration uniformly light brown with greyish semitransparent tegmina having slightly darker (brown) longitudinal veins and hardly darkened spots around darkish crossveins in distal and medial areas of dorsal part (coloration of other tegminal crossveins almost identical to that of cell membranes), almost indistinct darkish small and sparse marks on hind femora, and slightly darkened bases of spines of hind tibiae. Ocelli small (somewhat shorter than areas between them). Fore tibiae almost as in *M. proxima*. Anal plate similar to that of *M. kongtumensis*, but distance between tubercles at proximal part hardly greater; genital plate similar to that of *M. kongtumensis*; genitalia and spermatophore as in Figs XXI: 1-4.



Figs XXII (1-8). *Mistshenkoana*, ♂. 1-4, *M. discreta* sp. n.; 5-8, *M. propria* sp. n. Genitalia from above (1, 5), from below (2, 6), and from side (3, 7) (6, without valves); spermatophore from side (4, 8).

Female. Similar to male, but with darkish and not very distinct ornament between eyes (ornament similar to that in Fig. I: 4, but with larger darkening between ocelli), slightly darkened spots on pronotal disc, and almost uniformly light brown hind femora. Ovipositor distinctly shorter than hind femur.

Length (in mm). Body: ♂ 12, ♀ 11; body with wings: ♂ 16.5, ♀ 18.5; pronotum: ♂ 1.8, ♀ 2; tegmina: ♂ 11, ♀ 12; hind femora ♂ 7.8, ♀ 8.2; ovipositor 6.5.

Comparison. The new species is clearly distinguished from all congeners by the strongly widened proximal part of ectoparameres in the male genitalia and almost cylindrical spermatophore ampulla (this ampulla is more strongly narrowing to its base in other congeners with known spermatophore).

Mistshenkoana propria sp. n. (Figs XXII: 5-8)

Holotype. ♂, **Indonesia**, N. Sumatra, "SW of Kisaran, 2°42'18"N, 99°22'42"E", 5.III.1994, I. Sivec (ZIAS).

Paratype. ♀, same data as for holotype, but 21.II.1994 (ZIAS).

Description. Male (holotype). Head and pronotum uniformly dark brown, but with following light brown parts: most part of head, antennae (excepting two dark proximal segments); maxillae and labium (including their palpi); distal parts of both labrum and mandibles; line along fore pronotal edge; stripe along hind edge of pronotal disc. Legs, venter of thorax, and abdomen light brown with darkish ventral keels of fore and middle femora, dark longitudinal stripe on dorsal surface of fore and middle tibiae (this stripe widened at middle of fore tibiae), brown (rather dark) hind tibiae (excepting rather light tibial spines), apex of hind femora, distal half of hind tarsi, and abdominal dorsum. Tegmina brownish grey, comparatively dark, but with more or less semitransparent membranes and dark brown longitudinal veins and part of crossveins (tegmina crossveins in lateral part and proximal half of dorsal part slightly or hardly darker than cell membranes). Ocelli very small (much shorter than areas between them). Fore tibiae similar to those in Fig. XV: 19, but their distal part somewhat narrower. Anal plate similar to that of *M. discreta*, but somewhat shorter; genital plate more or less as in Fig. XV: 17; genitalia as in Figs XXII: 5-8.

Female. Similar to male, but pronotal disc slightly lighter (brown), fore and middle legs with darkish spots on inner surface of fore femora and on outer one of middle femora, and hind femora with two small darkish spots on dorsal surface. Ovipositor almost as long as hind femur.

Length (in mm). Body: ♂ 10.7, ♀ 8.6; body with wings: ♂ 16.5, ♀ 17.5; pronotum: ♂ 1.7, ♀ 1.8; tegmina: ♂ 10.4, ♀ 11.2; hind femora ♂ 7.7, ♀ 8.2; ovipositor 8.

Comparison. The new species is strongly distinguished from all congeners by the dark coloration and very characteristic shape of the male genital structures [of hind epiphallal lobes in profile (Fig. XXII: 7) and distal half of ectoparameres (Fig. XXII: 6)].

Mistshenkoana cicur (Saussure, 1878)

Holotype. ♀, **Philippines**, Luzon, F. Jagor (MNHU).

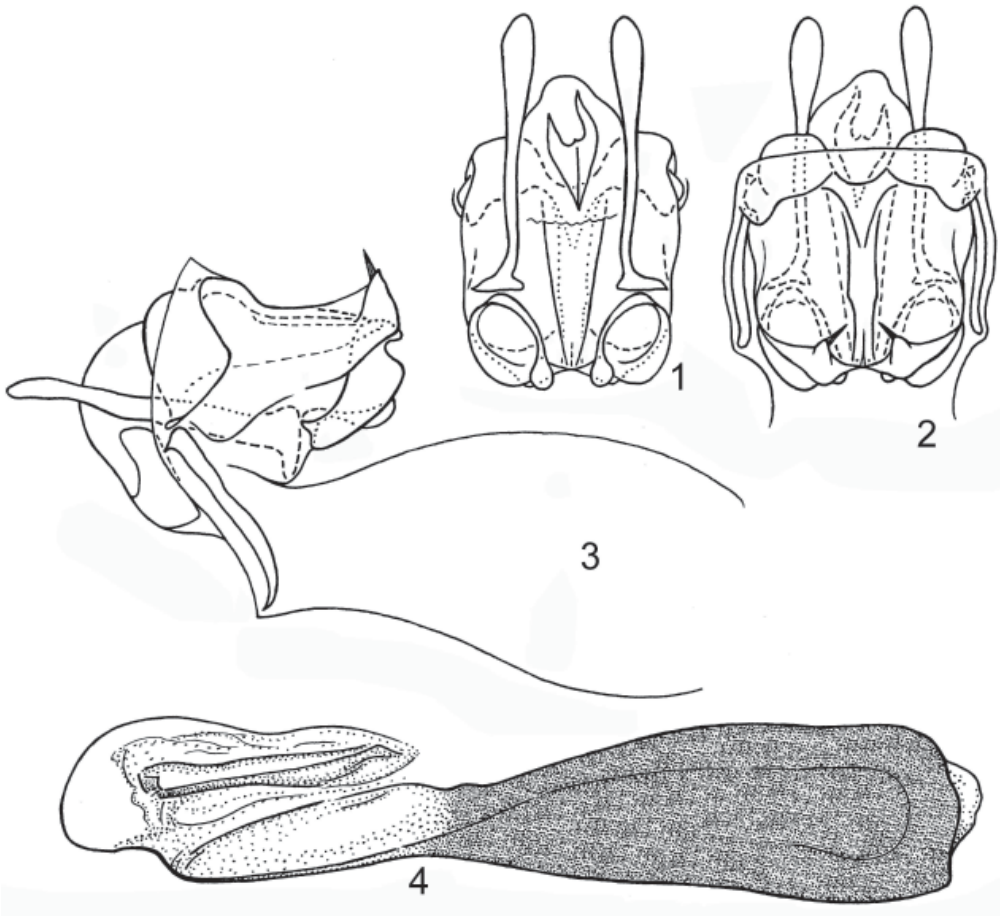
Note. This species is more or less similar to *M. ?gracilis* in general appearance, but it is characterized by the following features: coloration light brown, more or less uniform, but with slight darkenings behind ocelli, narrow darkish transverse stripe running between middle parts of lateral pronotal lobes along hind edge of pronotum, small darkenings on apical part of hind femora, distinctly spotted hind tibiae and tarsi, brown tegmina longitudinal veins, and whitish majority of tegmina crossveins (crossveins of distal tegmina part with coloration almost identical to that of cell membranes); fore tibiae more or less similar to those of *M. kongtumensis*, but with slightly larger inner tympanum; ovipositor almost as long as hind femur.

Length (in mm). Body 11; body with wings 20.5; pronotum 2.1; tegmina 13.5; hind femora 9.5; ovipositor 9.2.

Mistshenkoana? reticulata sp. n. (Fig. XXIV: 11)

Holotype. ♀, **Indonesia**, Java, "Podoscirtus asyrinx Sauss., Java, Brunner v. W. det." (ZIAS).

Description. Female (holotype). Upper part of both head and pronotum light brown with greyish tinge and some light spots on pronotal disc; antennae and lower part of head yellowish with slight small darkenings on scapes; pronotal disc yellowish with numerous very small dark spots; legs, venter of thorax, and abdomen yellowish with less numerous darkish dots on legs (in hind femora, these dots situated mainly along ventral keels and on inner surface of upper femoral half; in hind tibiae, these dots grouping in small spots on dorsal surface) and somewhat darkened abdominal apex; tegmina yellowish grey, light, but with slightly or hardly darker longitudinal veins, dark grey crossveins (forming characteristic reticular appearance of tegmina), and 6 small whitish spots along middle third of lateral edge of dorsal tegmina part. Ocelli small, distinctly shorter than areas between them. Fore tibiae almost as in Fig. XV: 10. Lateral tegmina part with



Figs XXIII (1-4). *Dinomunda griseipennis* (Chop.), ♂. **1-3**, genitalia from below (1), from above (2), and from side (3) (1, without rami and valves); **4**, spermatophore from side.

longitudinal venation as in Fig. XXIV: 11. Ovipositor somewhat shorter than hind femur.

Male unknown.

Length (in mm). Body 12.5; body with wings 21.5; pronotum 2.5; tegmina 14; hind femora 8.6; ovipositor 7.

Comparison. The new species differs from all congeners and all previous genera in the following combination of characters: coloration more or less uniformly light (including hind femora), tegmina with darkened crossveins and small whitish spots along lateral edge of dorsal part.

Genus **Dinomunda** gen. n.

Type species: *Aphonoides griseipennis* Chopard, 1969 (Malacca).

Diagnosis. Hind epiphallal lobes short, undivided, almost not hooked, but directed upwards

and provided with characteristic thickened seta (possibly a group of fused or almost fused setae looking as spine directed upwards and situated at apex of each of these lobes); ectoparameres strongly modified, consisting of sclerotized interrupted rings with widened hind part; spermatophore ampulla as in *Mistshenkoana* (Figs XX-III: 1-4). Other characters as in *Aphonoides*, but the male anal plate transverse and with 3 upper projections (Fig. XV: 21), and the male genital plate similar to that of *Mistshenkoana*.

Included species. Type species only.

Dinomunda griseipennis (Chopard, 1969),
comb. n.
(Figs XV: 21; XXIII: 1-4)

Material examined. **Malaysia:** 1 ♂, Perak (S. Malacca), "Hulu, Belum Expedition, B. Camp, 5°30'07"N,

101°26'21"E", 1-3.IV.1994, I. Sivec (ZIAS). **S. Thailand:** 1 ♂, prov. Surat Thani (C. Malacca), 40 km WSW of town Phanom, near Nat. park Khao Sok, primary forest, 20-29.VII.1996, A. Gorochov (ZIAS).

Note. In my previous paper (Gorochov, 2003: p. 292), this species was mentioned as a possible representative of Podoscirtini. This supposition was made on the basis of Chopard's figure of its male genitalia (Chopard, 1969: Fig. 262). In reality, it is a representative of Aphonoidini, which has significant differences from all known genera of this tribe in the structure of the male genitalia (Figs XXIII: 1-3). Some other features characterizing this species are as follows: coloration yellowish with light brownish upper part of both head and pronotum, blackish small and narrow spots behind each of ocelli and under lateral ones, darkish small dots on inner ventral keel of hind femora, semitransparent tegmina with yellowish veins and crossveins, and several brownish spots on abdominal dorsum; ocelli medium-sized (length of lateral ones almost equal to distance between lateral and median ocelli); fore tibiae more or less similar to those in Fig. XV: 19, but with slightly narrower distal part; male anal plate and spermatophore as in Figs XV: 21; XXIII: 4.

Length (in mm), ♀. Body 10-10.5; body with wings 15.5-16; pronotum 1.7-1.8; tegmina 10.5-10.8; hind femora 7.2-7.5.

Genus *Munda* Stål, 1877

Type species: *Munda picturata* Stål, 1877 (Philippines).

Note. The male genitalia and spermatophore (Fig. XXVI: 4) are almost as in *Mistshenkoana*, only ectoparameres somewhat different: their proximal and distal parts longer and/or narrower than in majority of *Mistshenkoana* species; medial projection comparatively long, rather narrow, and situated at middle part of ectoparameres (Figs XXVI: 2, 6; XXVII: 2); this projection well visible in profile as more or less small ventral tubercle directed downwards (Figs XXVI: 3, 7; XXVII: 3, 5, 7). The tegminal lateral part with longitudinal veins and their branches parallel to dorsal edge of this part (Figs XXIV: 1, 3, 6, 8, 10, 12) (in all previous genera, these veins more or less non-parallel; Figs I: 13; XXIV: 11). Other characters are similar to those of *Mistshenkoana*, but there are some additional differences: fore tibiae with only inner tympanum (as in all previous genera), with a pair of tympana, or without tympana (such diversity in the structure of tympanal organ is indicated for a group of species having very similar male genitalia; Figs XXVI: 1-3, 6, 7; XXVII: 1-7); hind wings often shortened (but not shorter than tegmina); in short-winged species, outlines of tegmina in rest position in profile distinctly arched, almost as in beetles; male anal plate sim-

ple, emarginated at apex and without any proximal projection (Fig. XV: 22).

The attribution of the name *Munda* to the genus including all species listed below or majority of them is questionable, as its type species is very insufficiently described and still unrevised. Here, I understand this genus in accordance with the preliminary opinions of some preceding researchers, who included in *Munda* several species with parallel venation of tegminal lateral part (Chopard, 1951: 504; Ingrisch, 1997: 49). The genus *Aphasius* Saussure, 1878 (including the single species *A. ritsemae*) is characterized by the parallel venation of tegminal lateral part (Fig. XXIV: 8), absence of tympana, and shape of body (and tegmina) similar to that of some short-winged species of *Munda*. It is not improbable that *Aphasius* is a synonym of *Munda*.

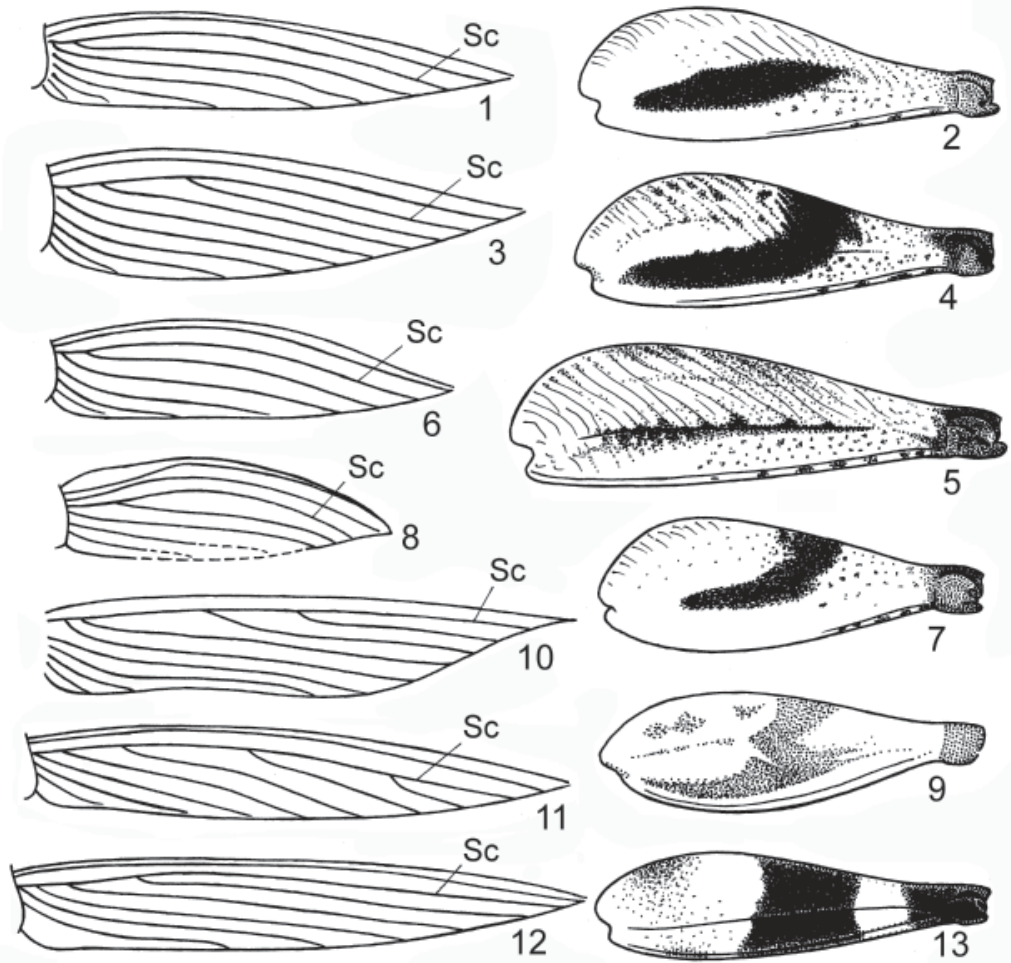
Included species (additional to the type species). *Gryllus* (*Eneoptera*) *fasciatus* Haan, 1842 (Java and/or Sulawesi), *Podoscirtus asyrinx* Saussure, 1878 (Java), *P. javanus* Saussure, 1878 (Java), *P. tacitus* Saussure, 1878 ("Guinée? Java?"), *P. flavithorax* Chopard, 1925 (Java), *M. darevskii* Bey-Bienko, 1966 (Komodo I.), *M. certa* sp. n., *M. renschi* sp. n., *M. crucifera* sp. n., *M. pulchella* sp. n., and possibly *P. bimaculatus* Saussure, 1878 ("Indes Orientales? Java?"), *Aphasius ritsemae* Saussure, 1878 (Timor), and *M. ? longissima* sp. n. Three other Indo-Malayan species included in this genus in the catalogue by Otte (1994) belong to *Mnesibulus* Stål (*Laurepa congrua* Walk.), *Mistshenkoana* (*P. cicur* Sauss.), or unknown genus (*P. lineiceps* Chop.); species from New Guinea and nearest islands as well as from Australia and the rest of Oceania which were included in *Munda* in this catalogue will be considered in the next paper, as they are in need of additional study.

Munda asyrinx (Saussure, 1878) (Figs XXIV: 1, 2; XXVI: 1-7)

Holotype. ♀, **Indonesia**, "Java, Hgg.", "962" (MNHU).

Additional material examined. **Indonesia:** 1 ♂, W. Java, "Java occident., Pengalengan, 4000, 1893, H. Fruhstorfer" (MIZP); 2 ♂, W. Java, "Java occ., Fr." (MIZP, ZIAS); 1 ♀, W. Java, near city Sukabumi, "Cinumpang", 800 m, 28.III.2003, M. Berezin (ZIAS); 3 ♂, 3 ♀, E. Java, "Tenger-Geb., Ostjava, Fruhstorfer S." (MNHU, ZIAS); 4 ♀, "Java, K. Fruhstorfer S." (MIZP, ZIAS); 1 ♀, "Java", O. Staudinger (ZIAS); 1 ♀, "Java" (ZIAS).

Note. Two latter females were determined as "*asyrinx*" (one of them by Brunner-Wattenwyl), but all females from MIZP were united under the general label "*javanus*" in the collection of this institution (all males from this collection were under the general label "*fasciatus*"). Judging by the original descriptions (Saussure, 1878), the differences between *M. asyrinx* and *M. javana*

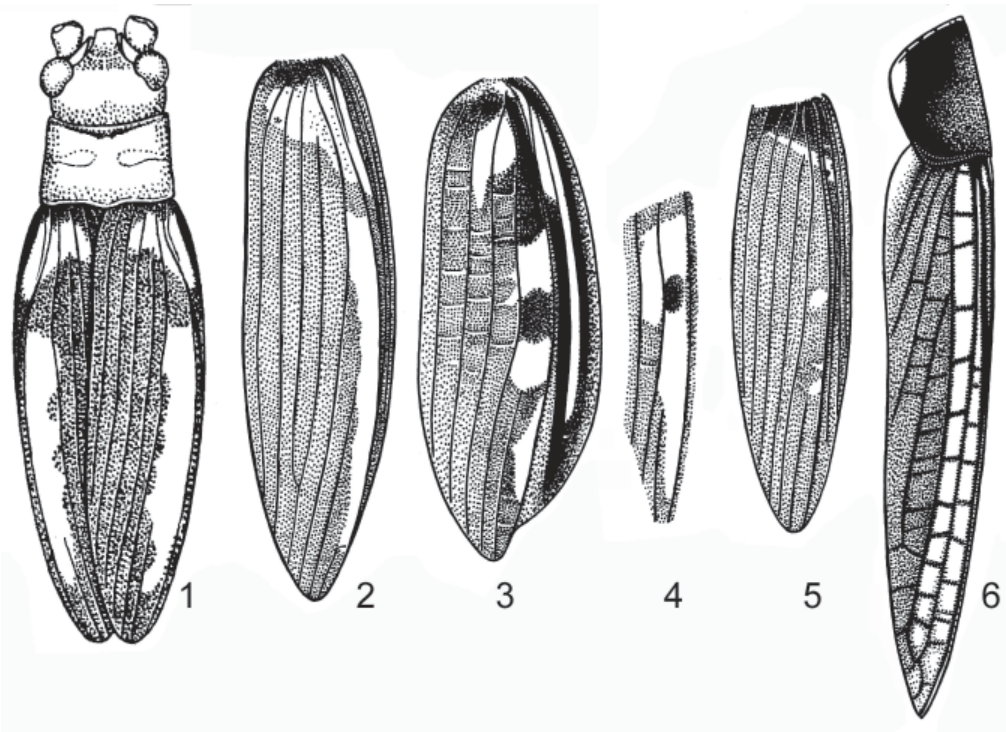


Figs XXIV (1-13). Tegminal lateral part (1, 3, 6, 8, 10-12) and hind femur from side (2, 4, 5, 7, 9, 13). **1, 2,** *Munda asyrinx* (Sauss.), ♂; **3,** *M. certa* sp. n., ♂; **4, 5,** *M. ?fasciata* (Haan) (4, ♂; 5, ♀); **6, 7,** *M. renschi* sp. n., ♀; **8, 9,** *M. ?ritsemae* (Sauss.), ♀ (syntype; Saussure, 1878); **10,** *M. ?bimaculata* (Sauss.), ♂ (holotype; Saussure, 1878); **11,** *Mistshenkoana? reticulata* sp. n., ♀; **12, 13,** *Munda? longissima* sp. n., ♂.

in coloration are, as it seems to me, not greater than between darker and lighter forms of the same species. Saussure indicated also that the apex of ovipositor in the latter species is more acute than in *M. asyrinx*, but this structure is rather similar in all representatives of Aphonoidini studied, and it is almost identical in all known species of *Munda*; it is not improbable that Saussure's indication is erroneous. Moreover, the original description of *M. tacitus* from the same publication is fitting the dark form of male of *M. asyrinx* (the latter species and *M. javana* are described from females only). So, it is not improbable that all these species names are synonyms.

M. asyrinx is characterized by the following features: coloration of head light brown with

darkened area between rostral apex and hind parts of eyes (sometimes this area rather dark, brown, but sometimes it is weakly developed, presented almost only by small darkish spot behind each of ocelli), short dark stripes along lower edges of antennal cavities and eyes, arched dark line between these stripes (almost as in Fig. XV: 4), darkish dots between antennal cavities, and weakly spotted antennae and distal parts of palpi (these stripes, line, dots, and spots often interrupted or almost indistinct); pronotum light brown with sparse darkish dots, but sometimes with brown spots on disc and dark brown spots or wide longitudinal band on lateral lobes (not occupying stripes along ventral and dorsal edges of these lobes); legs light brown with numerous dark or



Figs XXV (1-6). *Munda* and *Brevimunda*. 1, *M. cruciata* sp. n., ♂ (holotype; Bey-Bienko, 1966); 2, *M. certa* sp. n., ♂; 3, 4, *M. pulchella* sp. n., ♂ (3, holotype); 5, *M. renschi* sp. n., ♀; 6, *B. variegata* sp. n., ♂. Head, pronotum, and tegmina from above (1); right tegmen from above (2-5) (4, dorsal part without proximal, medial, and apical areas); pronotum and left tegmen from side (6).

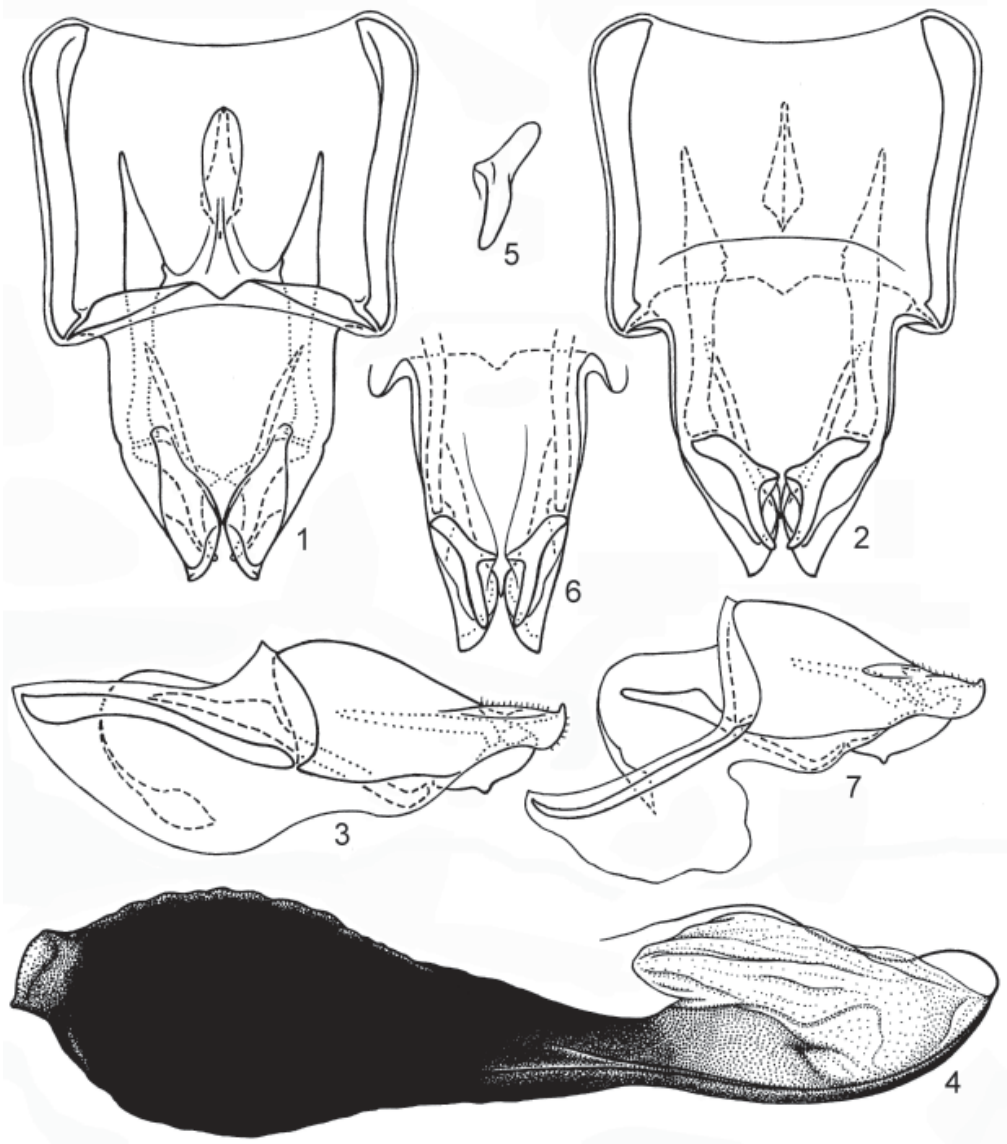
darkish dots and some additional darkenings (fore and sometimes middle tibiae with more or less distinct darkened stripe along their dorsal surface; hind tibiae often darkish and with dark bases of spines; hind tarsi slightly spotted; hind femora with distinct dark longitudinal band on outer surface, less distinct large darkish spot on upper half of inner surface, weakly darkened apical part, and darkish oblique lines on upper half and spots along ventral keels) (Fig. XXIV: 2); tegmina brown or brownish grey and with hardly darker longitudinal veins, lighter crossveins, whitish dense crossveins near base of dorsal part, and some other marks (in male, there is a whitish narrow humeral stripe interrupted in proximal and sometimes in distal halves of tegmen; this stripe similar to that in Fig. XXV: 1, but distinctly narrower; in female, there are several rather small whitish spots along lateral edge of dorsal part, and all crossveins whitish or almost whitish, lighter than in male having majority of crossveins with coloration similar to that of cell membranes); abdomen and venter of thorax light with more or less darkened dorsal and ventral parts of abdo-

men, darkish basal spot or median stripe on male genital plate, and slightly spotted cerci; ocelli rather small, shorter than areas between them; fore tibiae with elongate, slightly immersed inner tympanum and distinct, but somewhat shorter, outer tympanum; hind wings slightly (in male) or distinctly (in female) longer than tegmina; male anal plate more or less similar to that in Fig. XV: 22; male genitalia and spermatophore as in Figs XXVI: 1-7.

Length (in mm). Body: ♂ 11-12.5, ♀ 11-13.5; body with wings: ♂ 13-15.5, ♀ 17-19; pronotum: ♂ 1.6-1.9, ♀ 2-2.3; tegmina: ♂ 9-10, ♀ 12-13; hind femora: ♂ 6.2-7.5, ♀ 7.9-8.7; ovipositor 6.9-7.8.

***Munda ?fasciata* (Haan, 1842)**
(Figs XXIV: 4, 5)

Material examined **Indonesia:** 1 ♂, 1 ♀, W. Java, "Java occident., Pengalengan, 4000, 1893, H. Fruhstorfer" (MIZP); 1 ♂, W. Java, "Java occ., Fr." (MIZP); 2 ♂, E. Java, "Tengger-Geb., Ostjava, Fruhstorfer S." (MNHU, ZIAS).



Figs XXVI (1-7). *Munda asyrinx* (Sauss.), ♂. 1-4, E. Java; 5-7, W. Java. Genitalia from above (1), from below (2, 6), and from side (3, 7) (6, only distal half); spermatophore from side (4); ectoparamere from below and slightly from side (5).

Note. The specimens from MIZP were united under the general label “*fasciatus*” in the collection of this institution. This species was described from Java and Sulawesi (Haan, 1842-1844). It is possible that its syntypes belong to different species (Javanese and Sulawesi), but they are not revised, and before their study and lectotype designation, determination of the above-mentioned specimens may be only questionable.

These males are similar to those of *M. asyrinx*, but they differ in the following characters: head dark brown (or almost black) with light brown antennae, palpi, and distal parts of mandibles (antennae and palpi often with weakly distinct small darkish and lightish spots); pronotum similar to that of dark specimens of *M. asyrinx* (disc with light and dark spots; lateral lobes dark with narrow light stripe along ventral edge and small

lightish spot at middle part of fore half of these lobes); hind legs with dark longitudinal band on outer surface of femora situated slightly lower than in *M. asyrinx* and fused with large dark transverse spot on their upper half, darker apical part of femora (Fig. XXIV: 4), and spotted tibiae; tegmina distinguished from those of male of *M. asyrinx* by somewhat darker (dark brown or brown) general coloration and presence of 2-3 whitish spots along lateral edge of dorsal part instead of light humeral stripe (second spot rather large; first one sometimes strongly reduced; 1-2 crossveins near lateral edge of dorsal part often whitish); genitalia with only hardly wider medial projection of ectoparameres in profile. Most of these characters are also characteristic of *M. flavithorax* described from a single male, but the latter species has yellow humeral band on tegmina (as in *M. asyrinx*, but not as in the males examined).

The female examined is similar to these males in the shape of body parts and coloration, except for coloration of hind femora and tegmina; hind femora differ from those of males in the more developed darkish oblique lines, less developed dark outer longitudinal band and other large spots (Fig. XXIV: 5); the tegmina are distinguished from those of males by the light coloration of all crossveins, presence of light humeral spot in proximal area of tegmina, and absence of distinct light spots in more distal parts of tegmina (excepting very narrow spots around crossveins of dorsal part situated near its lateral edge).

Length (in mm). Body: ♂ 11.5-13, ♀ 15.5; body with wings: ♂ 14-15.5, ♀ 20.5; pronotum: ♂ 1.8-2.1, ♀ 2.8; tegmina: ♂ 9.3-10, ♀ 14.5; hind femora: ♂ 7.5-8.2, ♀ 10; ovipositor 10.7.

***Munda certa* sp. n.**

(Figs XV: 22; XXIV: 3; XXV: 2; XXVII: 1-3)

Holotype. ♂, **Indonesia**, Sumbawa, "Sunda-Exp. Rensch, Sumbawa, Batu Dulang", 10-15.V.1927 (MNHU).

Description. Male (holotype). Coloration of head light brown with distinct blackish transverse band between middle parts of eyes (fore edge of this band convex and reaching all ocelli), several darkish longitudinal stripes on hind part of vertex and behind eyes; pronotum light brown with darkish narrow stripes along fore and hind edges of disc, dark brown lower and fore parts of lateral lobes (excepting narrow lighter stripes along fore and ventral edges of these lobes), blackish short longitudinal stripe along fore half of dorsal edge of lateral lobes, brown stripe along their hind edge, and dark dots on light part of these lobes; legs light brown with small and almost indistinct spots on fore and middle legs, darkening on apical part of hind femora, and

slightly darkened hind tibiae; tegmina brown with yellowish large spot and narrow stripe along lateral edge of dorsal part (Fig. XXV: 2), dark brown upper part of lateral lobes, and veins and crossveins similar in coloration to nearest cell membranes; venter of thorax and abdomen light brown, but abdominal dorsum slightly darkened (cerci, anal and genital plates rather light). Ocelli and inner tympanum almost as in *M. asyrinx* and *M. ?fasciata*; outer tympanum well developed on right tibia (somewhat shorter than inner one), but obliterated on left tibia (there is only small depression). Hind wings slightly longer than tegmina (exposed part of hind wings 1.5 mm). Anal plate and genitalia as in Figs XV: 22; XXVII: 1-3; spermatophore with wider neck than in *M. asyrinx*.

Female unknown.

Length (in mm). Body 16; body with wings 17; pronotum 2.6; tegmina 11.7; hind femora 9.5.

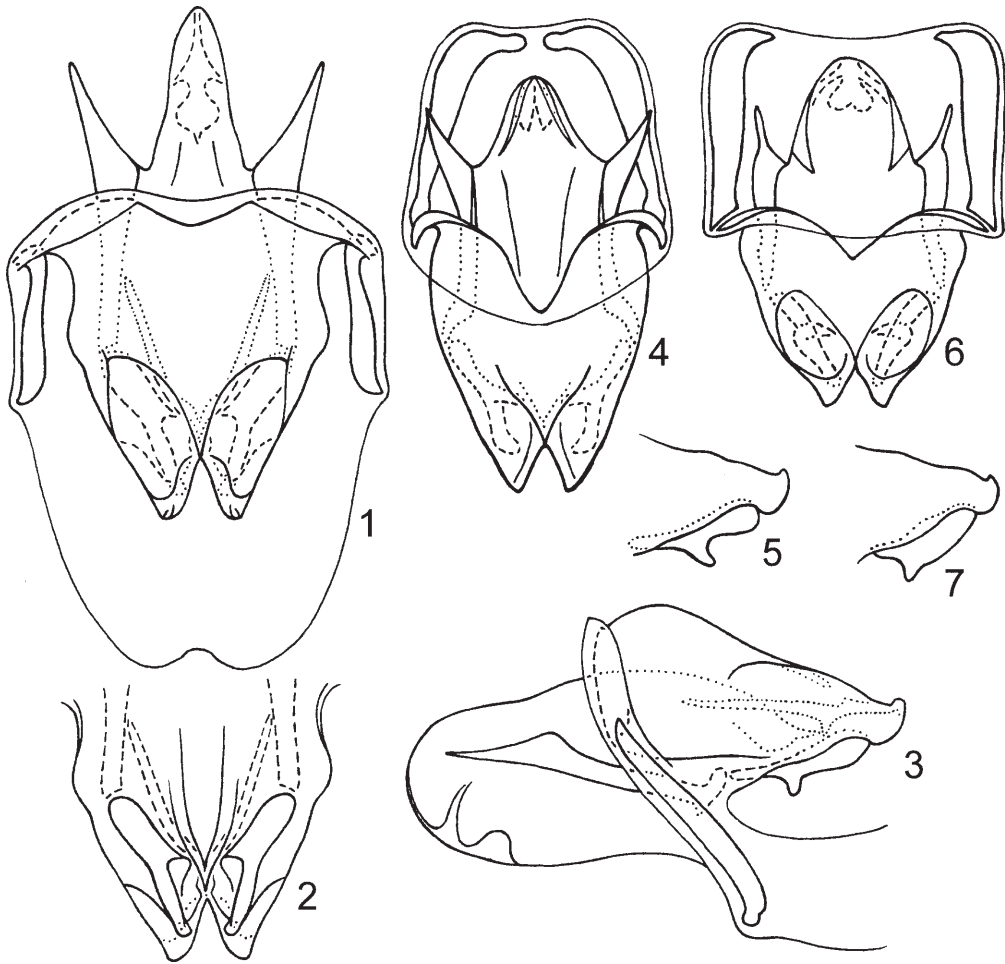
Comparison. The new species is similar to *M. asyrinx* in the coloration of male tegmina, but it differs in the larger size, wider light proximal spot of male tegmina, absence of characteristic dark longitudinal band on outer surface of hind femora, slightly shorter hind wings (in males of *M. asyrinx* and *M. ?fasciata*, exposed part of hind wings almost 2 mm), somewhat longer medial projection of ectoparameres in profile (Fig. XXVII: 3), and wider proximal notch of epiphallus (Fig. XXVII: 1) and neck of spermatophore.

***Munda renschi* sp. n.**

(Figs XXIV: 6, 7; XXV: 5)

Holotype. ♀, **Indonesia**, Sumbawa, "Sunda-Exp. Rensch, Sumbawa, Batu Dulang", 10-15.V.1927 (MNHU).

Description. Female (holotype). Coloration of head brown with a few short light brown longitudinal stripes on hind part of vertex, reddish yellow apex of rostrum, light brownish lower parts of head and antennae, slightly darkened genae behind eyes, large spot under rostral apex, and small spots on scapes; pronotum with light brown lateral lobes and spotted disc (central part of disc reddish yellow; other its parts brown and dark brown); dorsal part of tegmina brown with 3 whitish marks as in Fig. XXV: 5, but lateral tegminal part light brown with brown longitudinal veins and whitish crossveins (in dorsal tegminal part, coloration of all veins almost identical to that of nearest membranes); legs light brown with sparse darkish dots on fore legs (middle legs missing), darkened hind tibiae (having very slight spots) and distal half of hind tarsi, and distinct darkening on hind femora similar to those of *M. ?fasciatus* (but dark longitudinal outer band shorter and situated somewhat higher; Fig. XXIV: 7); venter of thorax light brown; abdomen grey-



Figs XXVII (1-7). *Munda*, ♂. 1-3, *M. certa* sp. n.; 4, 5, *M. pulchella* sp. n. (holotype); 6, 7, *M. crucifera* sp. n. (holotype). Genitalia from above (1, 4, 6), from below (2), and from side (3, 5, 7) (2, 5, 7, only distal half).

ish brown, only slightly darker than thoracic venter and with a few small darkish spots on cerci. Ocelli very small, clearly smaller than in all previous congeners. Inner tympanum oval and slightly immersed; outer tympanum well developed, slightly smaller than inner one. Hind wings hardly longer than tegmina; length of their hind exposed parts about 1 mm.

Male unknown.

Length (in mm). Body 10; body with wings 14; pronotum 2.2; tegmina 10; hind femora 7.7; ovipositor 5.8.

Comparison. The new species is similar to *M. ?fasciatus* in the coloration of tegmina and hind femora, but it is clearly distinguished by the lighter head and pronotal lobes, presence of characteristic whitish oblique stripe near base of dorsal

tegmina (Fig. XXV: 5), shorter hind wings, and probably smaller size.

Etymology. This species is named after its collector, B. Rensch.

***Munda crucifera* sp. n.**
(Figs XXV: 1; XXVII: 6, 7)

Holotype. ♂, **Indonesia**, Komodo I. (between Sumbawa and Flores), near bank of sea, 19.VIII.1962, I. Darevski (ZIAS).

Paratypes. 1 ♂, 2 ♀, same data as for holotype, but 19-22.VIII.1962 (ZIAS).

Description. Male (holotype). Coloration of head very light, yellowish with light brown antennal flagellum, large spot between ocelli, band along hind edge of head dorsum, and sparse dots between these darkenings, dark brown small spots

under lateral ocelli, dots between antennal cavities, and arched line between lower edges of eyes similar to that in Fig. XV: 4; pronotum very light with narrow darkish stripes along fore and hind edges (fore stripe as in Fig. XXV: 1); legs yellowish with sparse brownish dots on fore and middle femora, darker and numerous small spots on dorsal surface of fore and middle tibiae (these spots more or less fused with each other), light brown longitudinal band on outer surface of hind femora similar in shape to that of *M. ?fasciatus*, brown apical part of hind femora, dorsal surface of hind tibiae, and middle part of all tarsi (tibial spines light; other surfaces of hind tibiae slightly spotted); tegmina with brown dorsal part having characteristic whitish marks (general shape of dark parts of both tegmina in rest position almost cross-shaped; Fig. XXV: 1); tegminal lateral part light brown with brown upper longitudinal band, brown longitudinal veins, and almost whitish crossveins; thoracic venter and abdomen very light, abdominal dorsum, longitudinal spot on genital plate, and almost indistinct spots on cerci darkened. Ocelli as in *M. renschi*. Inner tympanum oval and very slightly immersed, not large; outer tympanum obliterated (there is only small depression) on both fore tibiae. Hind wings and tegmina almost equal in length. Anal plate and genitalia more or less similar to those of *M. certa*, but epiphallus with deeper and angular proximal notch, slightly shorter hind epiphallic lobes, medial projection of ectoparameres directed downwards and slightly forward (in *M. certa*, it is directed downwards only; for comparison, see Figs XXVII: 3 and 7), and mold of spermatophore attachment plate with a pair of distinct long sclerotized ribbons reaching dorsal surface of spermatophore sac (Figs XXVII: 6, 7).

Variation. In paratype, darkened longitudinal outer band on hind femora separated from upper darkening by light interspace.

Female. Somewhat similar to male, but clearly distinguished by following characters of coloration: general coloration light brown; head with brown spots under eyes and between clypeus and darkening under rostral apex; pronotum with brown spots on disc, dark brown stripes along fore and hind edges of disc, and sometimes with darkened lateral lobes; tegmina with narrower whitish humeral stripe or almost without whitish marks on dorsal part (there are only very small spot instead large whitish spot near base of this part and small spot at middle of this part near its lateral edge); hind wings hardly longer than tegmina.

Length (in mm). Body: ♂ 11.8-12.7, ♀ 12-12.5; body with wings: ♂ 11.5-13.2, ♀ 13.5-14; pronotum: ♂ 1.8-2, ♀ 2.1-2.3; tegmina: ♂ 8.2-9, ♀ 9.3-9.6; hind femora 7.8-8.6, ♀ 9.2-9.8; ovipositor 6.7-7.2.

Comparison. The new species is similar to *M. asyrinx* and *M. certa* in the coloration of male tegmina, but it differs in the wider whitish humeral stripe in male tegmina, characteristic coloration of fore part of head, absence of outer tympana, and some structures of male genitalia.

Note. This species was determined by Chopard as "*Munda* sp. voisin de *asyrinx*" and by Bey-Bienko as "*Munda* sp. aff. *asyrinx*" (Bey-Bienko, 1966).

***Munda pulchella* sp. n.**

(Figs XV: 4; XXV: 3, 4; XXVII: 4, 5)

Holotype. ♂, **Indonesia**, Sumbawa, "Sunda-Exp. Rensch, Sumbawa, Besar", 24.IV-2.V.1927 (MNHU).

Paratypes. 6 ♂, 2 ♀, same data as for holotype (MNHU, ZIAS).

Description. Male (holotype). Coloration of head yellowish with brown and dark brown marks as in Fig. XV: 4, light brown antennal flagellum, and slightly darkened distal segment of maxillary palpi; coloration of pronotum similar to that in male of *M. crucifera*; legs light brownish with almost indistinct darkish longitudinal band on outer surface of hind femora, slightly darkened apical part of these femora, weakly spotted hind tibiae, and darkened middle part of all tarsi; tegmina with brown medial half of dorsal part (including longitudinal veins), whitish crossveins in this area, dark brown lateral half of dorsal part and upper half of lateral part, whitish yellow 4 large spots and longitudinal stripe (mainly between *Sc* and *R*) in these areas (Fig. XXV: 3), light brown lower half of lateral part (including longitudinal veins), and slightly lighter crossveins in latter area; thoracic venter and abdomen yellowish, abdominal dorsum somewhat darkened. Ocelli as in *M. renschi* and *M. crucifera*. Both tympana absent. Hind wings as in *M. renschi*. Anal plate more or less similar to that in Fig. XV: 22; genitalia as in Figs XXVII: 4, 5.

Variation. Coloration sometimes somewhat lighter or slightly darker; in light specimens, 3 distal large whitish yellow spots on tegmina partly fused with each other (Fig. XXV: 4) and arched line between lower edges of eyes strongly interrupted or almost absent.

Female. Similar to male, but with some differences: head with more distinct darkening between eyes; pronotum sometimes with darkish spots on middle part of disc and at centre of lateral lobes; hind femora with more distinct dark outer longitudinal band; tegmina with light brown lateral part, 3 large whitish yellow spots on dorsal part, and light stripe situated mainly between proximal halves of *Sc* and *R* (in distal half of tegmen, area between *Sc* and *R* with distinct light crossveins only); abdomen with slightly darkened sternites.

Length (in mm). Body: ♂ 12-13, ♀ 12.5-13; body with wings: ♂ 12.5-13.5, ♀ 15-16; pronotum: ♂ 1.9-2.2, ♀ 2.4-2.6; tegmina: ♂ 8.8-9.2, ♀ 10.4-10.7; hind femora: ♂ 9-9.5, ♀ 10.3-10.6; ovipositor 8.4-8.8.

Comparison. This new species is most similar to *M. crucifera* in the coloration of head, but it is clearly distinguished in the characteristic coloration of tegmina, absence of both tympana, deeper proximal notch of epiphallus (Fig. XXVII: 4), and medial projection of ectoparameres directed downwards and partly backwards (Fig. XXVII: 5). From *M. ? ritsemae* (Figs XXIV: 8, 9) lacking both tympana also, *M. pulchella* differs in the less developed darkenings on hind femora, distinct light stripe between tegminal *Sc* and *R*, and exposed apex of hind wings in rest position.

Munda darevskii Bey-Bienko, 1966
(Fig. XV: 14)

Holotype. ♀, **Indonesia**, Komodo I. (between Sumbawa and Flores), 2-3.VIII.1962, I. Darevski (ZIAS).

Note. This species is known from the holotype only. It has brown coloration with the dark brown bands on disc along its lateral edges (Fig. XV: 14), a few small whitish spots along distal half of lateral edge of tegminal dorsal part, almost light brown lateral part (excepting narrow darker stripe along its dorsal edge), lightish crossveins (slightly lighter than nearest membranes), light brown hind femora (excepting dark brown apical part, slight longitudinal darkening on outer surface, and large darkish spot at middle of upper part), almost dark brown hind tibiae, and lightish hind basitarsi (excepting ventral and apical parts). Other distinct characters are the smaller ocelli (smaller than in all previous congeners), tympana as in *M. crucifera*, and hind wings slightly longer than tegmina (length of exposed part of hind wings about 1.5 mm).

Length (in mm), ♀. Body 16; body with wings 19.5; pronotum 2.9; tegmina 13.5; hind femora 9.9; ovipositor 8.9.

Munda? longissima sp. n.
(Figs XXIV: 12, 13)

Holotype. ♀, **Indonesia**, W. Java, Situ Gunung (Nat. reserve Gede-Pangrango) near city Sukabumi, forest, 11-12.IV.2003, M. Berezin (ZIAS).

Description. Female (holotype). Coloration of head dark brown with brown antennae and mouthparts; pronotum uniformly dark brown; fore legs brown with light brown coxae and proximal part of femora; coloration of middle legs similar, but with dark brown tibiae and two proximal segments of tarsi; hind femora very light, yellowish (almost whitish) with dark brown distal part, wide transverse band at middle part, and

less dark small spots at proximal part (on dorsal surface and near outer ventral keel) (Fig. XXIV: 13); hind tibiae dark brown with slightly lighter upper half of basitarsi (excepting their apical part); tegmina brown (rather dark) with narrow lightish stripe along costal edge, whitish crossveins (crossveins of dorsal part situated near its base dense), and several very small whitish spots around some crossveins of dorsal part situated along its lateral edge; thoracic venter light; abdomen slightly darkened, but its apex rather dark, and cerci light with darkish distal part. Ocelli medium-sized; length of lateral ones almost equal to distance between lateral and median ocelli. Inner tympanum oval, rather large and somewhat immersed; outer tympanum almost twice smaller, but well developed and hardly immersed. Tegmina and ovipositor very long; hind wings much longer than tegmina (length of exposed part of hind wings almost 4 mm), and ovipositor distinctly longer than hind femur.

Male unknown.

Length (in mm). Body 14; body with wings 25; pronotum 2.2; tegmina 17.3; hind femora 9.4; ovipositor 12.

Comparison. The new species is clearly distinguished from all congeners by the characteristic coloration, very long wings and ovipositor.

Genus *Protomunda* gen. n.

Type species: *Protomunda nigella* sp. n.

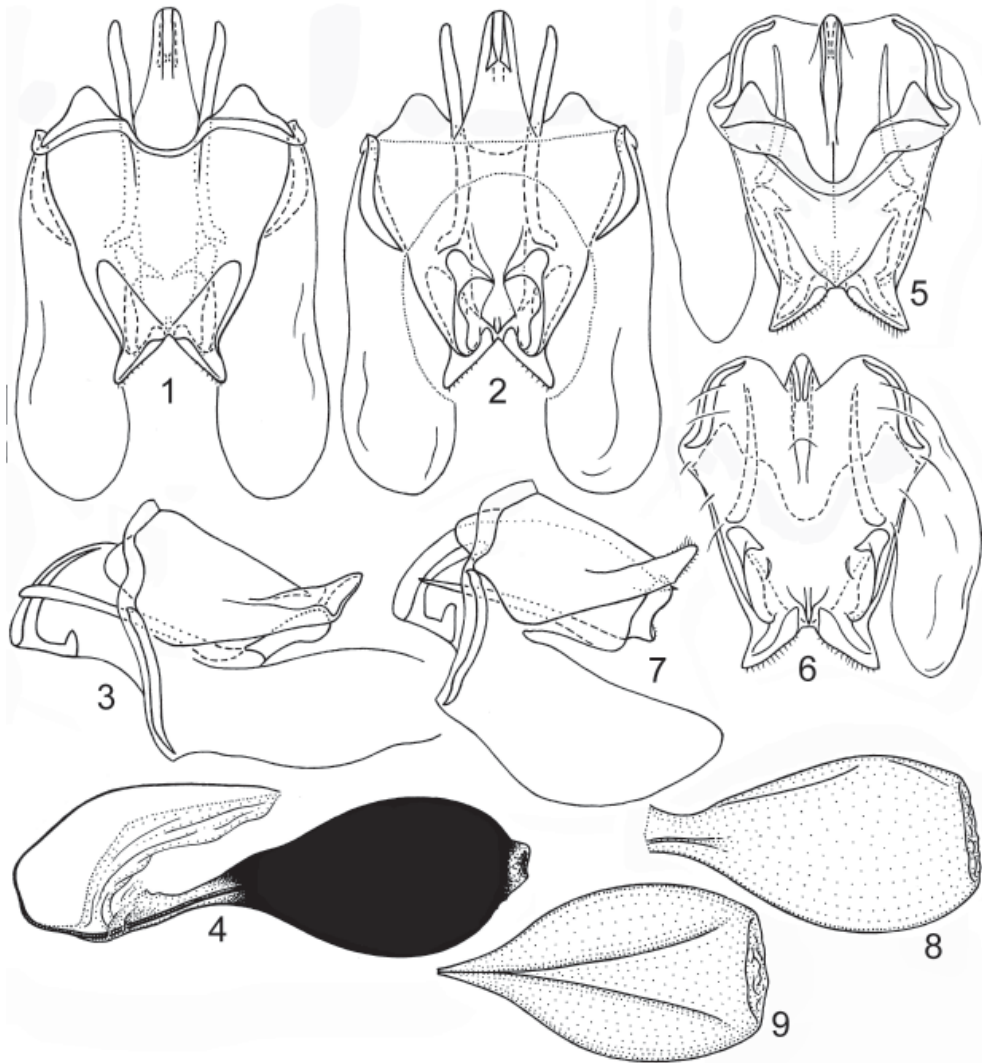
Diagnosis. Male genitalia (Figs XXVIII: 1-3, 5-7) similar to those of *Mistshenkoana* and *Munda*, but spermatophore (Figs XXVIII: 4, 8, 9) with comparatively short primitive ampulla (as in *Aphonoides*, *Exomunda*, and *Zamunda*). Fore tibiae with both tympana well developed (as in some representatives of *Munda*, but not as in all previous genera). Tegminal lateral part with non-parallel venation (as in all previous genera excepting *Munda*; Figs I: 13; XXIV: 11). Male anal plate simple, similar to that of *Munda*; male genital plate rather short (length of this plate similar to that of *Aphonoides*, *Exomunda*, *Zamunda*, and *Furcimunda*), but with apex and longitudinal median concavity almost as in *Mistshenkoana*, *Deinomunda*, and *Munda*.

Included species. Type species and *P. florida* sp. n.

Protomunda nigella sp. n.
(Figs XXVIII: 1-4)

Holotype. ♂, **Indonesia**, S. W. Sulawesi, 70 km E of city Makassar (= Ujung Pandang), env. of town Malino, Mt. Gunung Bawa Karaeng near vill. Appiang, primary forest, 1500-2000 m, 31.X-1.XI.2004, A. Gorochov (ZIAS).

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



Figs XXVIII (1-9). *Protomunda*, ♂. 1-4, *P. nigella* sp. n.; 5-9, *P. florida* sp. n. (holotype). Genitalia from above (1, 5), from below (2, 6), and from side (3, 7) (2, 6, without median part of base of valves); spermatophore from side (4); its ampulla from side (8) and from above (9).

Description. Male (holotype). Coloration of head blackish with yellow small spots before lateral ocelli and short longitudinal stripes behind medial edges of eyes, yellowish labrum, brown other mouthparts (excepting blackish maxillary palpi), transverse spot under rostrum and antennal cavities, and dark brown antennal flagellum and spots on hind part of vertex; pronotum blackish with dark brown median part of disc and yellow interrupted stripe along dorsal edge of each lateral lobe; fore and middle legs dark brown with not very distinct light brown spots; hind femora brown with blackish apical part; hind tibiae and

tarsi of the same colour as fore and middle legs, but with almost blackish basal part; tegmina dark brown with almost blackish all longitudinal veins and several crossveins along anal edge of distal half and in apical area of dorsal part (there are small almost blackish spots around these crossveins), yellow rest of crossveins, distinct small spots around them, and several larger spots at base of tegmina and along lateral edge of dorsal tegminal part; thoracic venter and abdomen with darkened median part (including genital plate) and abdominal tergites (including anal plate), but with light abdominal pleural parts and lateral

spots on pterothorax; cerci slightly darkened. Median ocellus very small; lateral ones medium-sized (their length almost equal to distance between median and lateral ocelli). Inner tympanum rather large, oval, slightly immersed; outer tympanum slightly smaller, but not immersed. Hind wings slightly longer than tegmina; length of exposed part of hind wings about 1 mm. Genitalia and spermatophore as in Figs XXVIII: 1-4.

Female. Similar to male, but with lightish apical part of maxillary palpi, distinct spots on lower part of clypeus, almost indistinct spots between lateral ocelli and on antennae, narrow light vertical line under rostral apex (instead of transverse spot under rostrum and antennal cavities in male), brown general coloration of tegmina with dark brown longitudinal veins (other marks very similar to those of male), and less developed darkenings on apex of hind femora and base of hind tibiae.

Length (in mm). Body: ♂ 12.3, ♀ 13.5; body with wings: ♂ 13.8, ♀ 14.5; pronotum: ♂ 2.2, ♀ 2.4; tegmina: ♂ 9, ♀ 10.8; hind femora: ♂ 8, ♀ 8.2; ovipositor 8.5.

Protomunda florida sp. n.
(Figs XXVIII: 5-9)

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

Paratypes. **Indonesia:** 3 ♂, 3 ♀, same data as for holotype (MIZP, ZIAS); 2 ♀, SW. Sulawesi, 70 km E of city Makassar (= Ujung Pandang), env. of town Malino, Mt. Gunung Bawa Karaeng near vill. Appiang, forest, 1500-2000 m, 31.X-1.XI.2004, A. Gorochov (ZIAS); 1 ♀, SW. Sulawesi, 35-40 km N of city Makassar, Nat. park Bantimurung, forest, 500 m, 29-30.X.2004, A. Gorochov (ZIAS).

Description. *Male* (holotype). Coloration of head reddish yellow with almost blackish dorsal part including rostral apex and areas behind upper halves of eyes (there are a pair of very short dark vertical stripes from rostral apex to middle part of antennal cavities and longitudinal reddish spots behind upper part of eyes), dark brown proximal part of antennae, and reddish brown most part of antennal flagellum; pronotum dark brown with blackish upper halves of lateral lobes; fore and middle legs with coxae and most part of femora reddish yellow, apical part of femora, tibiae, and proximal tarsal segments dark brown and distal tarsal segment brown; hind legs with coxae and proximal half of femora yellowish with small brown marks on outer and dorsal femoral surfaces, distal half of femora, as well as tibiae and tarsi brown; tegmina light brown with intensely brown longitudinal veins, reddish yellow crossveins, narrow spots around these crossveins, and rather large spots at base of tegmina; thoracic venter, lateral parts of pterothorax and abdo-

men, genital plate, and cerci yellow; abdominal sternites and tergites, including anal plate, somewhat darkened (brown and brownish). Structure of body parts very similar to that of *P. nigella*, but outer tympana slightly smaller, and genitalia with slightly wider hind epiphallic lobes and deeper proximal median notch of epiphallus (for comparison, see Figs XXVIII: 1, 2 and 5, 6; in Fig. XXVIII: 7, spermatophore sac partly pushed in distal half of genitalia, and their ectoparameres deformed, but in Fig. XXVIII: 3, genitalia shown in rest position).

Variation. One paratype similar to holotype in coloration, but with yellowish parts of body instead of reddish yellow. Two other paratypes distinctly darker, with intensely brown parts of body instead of reddish yellow or yellowish ones (coloration of their tegminal crossveins almost indistinguishable from that of cell membranes, from light brown to brownish yellow).

Female. Females collected by Fruhstorfer similar to all above-mentioned males (the same parts of body reddish yellow, yellowish, or intensely brown), but females collected by Gorochov lighter than holotype and all other paratypes (all light parts yellowish, not reddish yellow; head with reddish brown hind part of vertex and almost light brown distal half of antennae; pronotum with reddish brown disc and lower part of lateral lobes; fore and middle tibiae with light brown ventral halves; hind tibiae and tarsi light brown) and with hardly larger outer tympana.

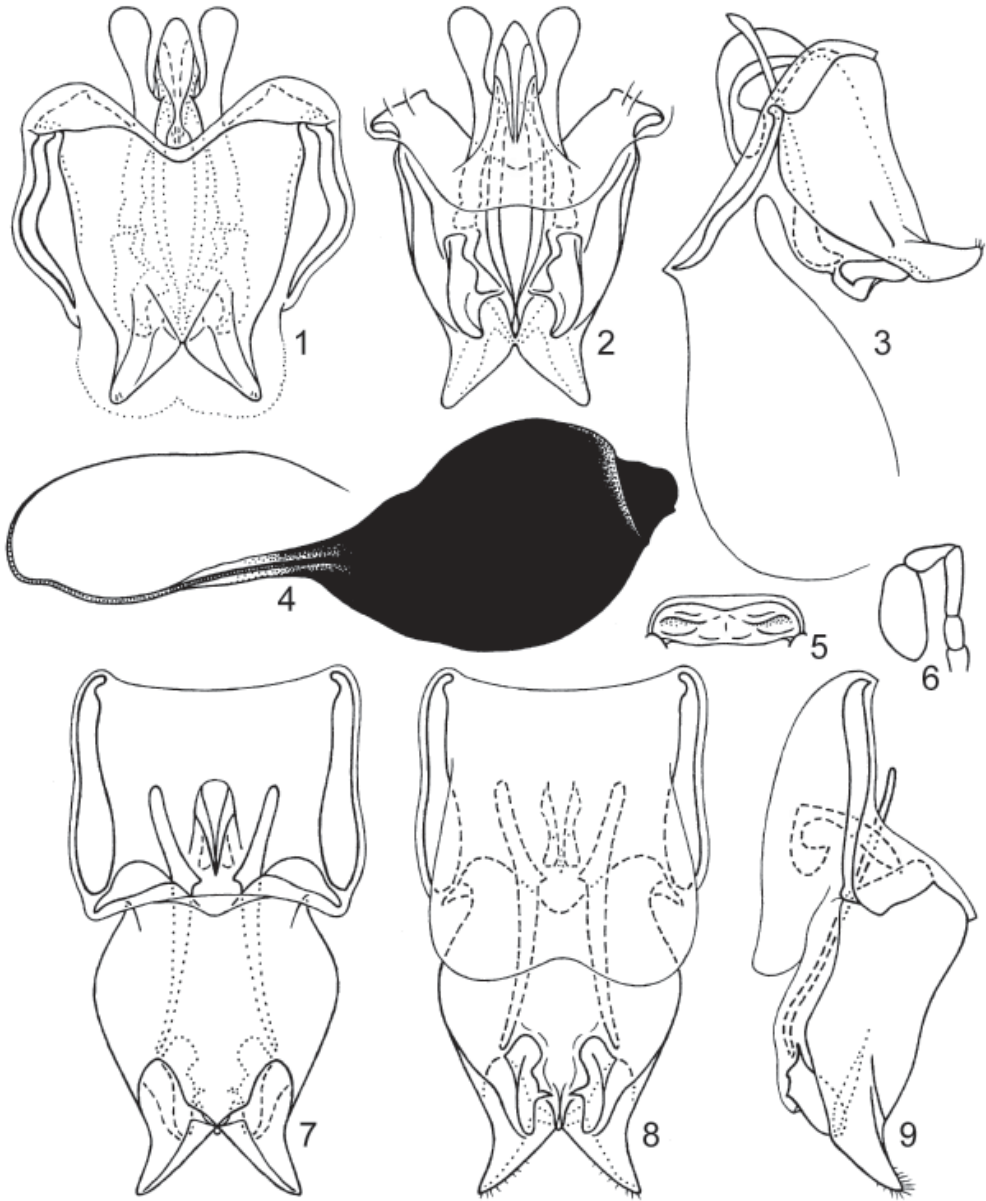
Length (in mm). Body: ♂ 12.5-14, ♀ 10-17.5; body with wings: ♂ 13.5-15, ♀ 16-18.5; pronotum: ♂ 2.1-2.3, ♀ 2.3-2.6; tegmina: ♂ 9.5-10, ♀ 11.5-12.8; hind femora: ♂ 8-8.5, ♀ 8.5-9.7; ovipositor 8.6-10.

Comparison. The new species is distinguished from *P. nigella* in the above-mentioned characters of the male genitalia and lighter coloration (but without light stripe along dorsal edge of lateral pronotal lobes).

Genus **Brevimunda** gen. n.

Type species: *Brevimunda variegata* sp. n.

Diagnosis. Male genitalia and spermatophore (Figs XXIX: 1-4, 7-9) similar to those of *Protomunda*, but fore tibiae with only rather small inner tympanum (no any traces of outer tympanum). Maxillary palpi with apical segment strongly widened (Fig. XXIX: 6), distinctly more widened than in all previous Aphonoidini. Tegminal lateral part with longitudinal veins parallel (almost as in *Munda*) or intermediate between those of *Munda* and all other genera of Aphonoidini (Fig. XXV: 6); hind wings hardly shorter than tegmina, extending to their apex (in all other Aphonoidini, hind wings longer, from slightly to



Figs XXIX (1-9). *Brevimunda*, ♂. 1-6, *B. variegata* sp. n.; 7-9, *B. kinabalu* sp. n. (holotype). Genitalia from above (1, 7), from below (2, 8), and from side (3, 9) (2, without rami); anal plate from behind and slightly from above (5); maxillary palpus from side (6).

strongly longer than tegmina). Male anal plate short and with a pair of characteristic small transverse lobes at upper (proximal) half (Fig. XXIX: 5); male genital plate more or less similar to that of *Protomunda*.

Included species. Type species and *B. kinabalu* sp. n.

***Brevimunda variegata* sp. n.**
(Figs XXV: 6; XXIX: 1-6)

Holotype. ♂, Malaysia, Sabah (N. Borneo), Mt. Kinabalu, “Kinabalu, Heyne, 901” (ZIAS).

Description. Male (holotype). Body and head somewhat depressed dorsoventrally. Coloration

of head black (including proximal part of antennae) with following lighter parts: mouthparts yellowish (including palpi) with brownish labrum and distal part of mandibles, maxillae, and labium; lower part of genae and most part of antennae from brown to light brown. Pronotum with brown most part of disc and middle part of upper half of lateral lobes, dark brown fore part of disc, black rest of lateral lobes excepting yellow spot near ventral edge and narrow stripe along fore edge of pronotum (Fig. XXV: 6). Fore and middle legs with yellowish coxae and most part of femora, dark brown distal part of femora and most part of tibiae, light brown tarsi and apical part of tibiae (fore tibiae also with weakly distinct lighter spots on lower half; fore tarsi with brown second segment); hind femora yellowish with dark brown distal part and longitudinal darkenings on dorsal and outer surfaces; hind tibiae reddish brown; hind tarsi brownish with yellowish upper half of basitarsus. Tegminal dorsal part greyish with dark brown veins (including crossveins) and yellowish spots on a few proximal cell membranes; tegminal lateral part dark brown with blackish veins (including crossveins), two rows of yellow cell membranes along dorsal edge, and short yellowish stripe along ventral edge (Fig. XXV: 6). Thoracic venter yellowish with darkenings on sternites of pterothorax; abdomen with brown proximal tergites, dark brown distal tergites, sternites, anal and genital plates, yellowish pleural membranes and cerci (distal part of cerci probably darkened). Median ocellus virtually absent; lateral ocelli very small. Genitalia and spermatophore as in Figs XXIX: 1-4.

Female unknown.

Length (in mm). Body 9.2; body with wings 10.3; pronotum 1.8; tegmina 8; hind femora 6.4.

***Brevimunda kinabalu* sp. n.**
(Figs XXIX: 7-9)

Holotype. ♂, **Malaysia**, Sabah (N. Borneo), Mt. Kinabalu, "Royal. Soc. Exped., coll. S. Kueh", "Bembangan Trail, 18.III-4.IV.1964" (BMNH).

Paratype. ♂, same data as for holotype, but "Mesilau Trail, 27.III-1.IV.1964" (ZIAS).

Description. *Male* (holotype). Shape of body and structure of its parts similar to those of *B. variegata*. Coloration light brown with reddish tinge (especially on pronotum and legs) and some additional marks: head yellowish with light brown genae and hind part of vertex, brown other parts of head dorsum, rostrum from apex to lower edge of antennal cavities, membrane of these cavities, scapes, and weakly distinct spots behind eyes (on genae); legs with slightly darker second segment of tarsi and small yellowish dorsal spot at base of hind tibiae; tegminal veins (including crossveins) hardly darker than cell mem-

branes; abdominal sternites dark brown; metathoracic sternite and genital plate brown; abdominal dorsum light brown with brown distal part (including anal plate). Genitalia distinguished from those of *B. variegata* by distinctly narrower proximal part of epiphallus, slightly longer hind epiphallic lobes, narrower endoparameres (viewed from above or below), and characteristic shape of ectoparameres (for comparison, see Figs XXIX: 1-3 and 7-9).

Variation. Paratype with additional small darkish spot on dorsal surface of hind tibiae near basal yellowish spot.

Female unknown.

Length (in mm). Body 9-9.5; body with wings 10.5-11; pronotum 1.9-2; tegmina 7.8-8.2; hind femora 7.3-7.6.

Comparison. The new species differs from *B. variegata* in the more uniform light coloration and characters of the male genitalia listed above.

Indo-Malayan taxa possibly belonging to Aphonoidini

In one of my previous communications (Gorochov, 2003), the list of enigmatic genera and species possibly belonging to Podoscirtini was published. These taxa are monotypical *Aphasius* Sauss. (Timor) and *Corixogryllus* Bol. (Hindustan), *Platydictylus signatipennis* Walker, 1869 (Sulawesi), *Anisotrypus indivisus* Saussure, 1878 (Borneo), *Mundeicus sexmaculatus* Chopard, 1969 (Malacca), *M. trimaculatus* Chopard, 1969 (Myanmar), and *Aphonoides griseipennis* Chopard, 1969 (Malacca and Sumatra). Now I give some corrections: the first genus probably belongs to Aphonoidini (a possible synonym of *Munda*); the second genus, judging by the outlines of the male genitalia (Gorochov, 2003: Fig. XIV: 10), probably does not belong to Aphonoidini; *P. signatipennis* considered by Otte (1994) a representative of *Mnesibulus* Stål may belong to Aphonoidini with the both tympana developed (it differs from all known species of *Protomunda* and *Munda* in the coloration and weakly parallel venation of tegminal lateral part; its male is unknown); *A. indivisus* included in the Oceanian genus *Anisotrypus* Sauss. has the wide rostrum of head, open outer tympanum, and slit-like inner tympanum, the characters presented in Eneopterinae or some Podoscirtini, but not in Aphonoidini; two Indo-Malayan species included in the Australian genus (now subgenus) *Mundeicus* Chop. are described from only females and characterized by the presence of both tympana and non-parallel venation of tegminal lateral part (their generic and tribal position are unclear; they may be representatives of *Protomunda* distin-

guished from all congeners by the coloration, but their male genitalia and spermatophore are unknown); *A. griseipennis* is here included in a new genus (*Dinomunda*) of Aphonoidini.

Also, it is possible that *Euaphonus atrifrons* Chopard, 1931 (Sulawesi) known from only female belongs to Aphonoidini. Probably, this species was erroneously included in the American genus *Euaphonus* Heb. It has only an inner tympanum, which is rather deeply immersed (almost slit-like). Such structure of tympanal organs is unknown in Aphonoidini or Indo-Malayan Podoscirtini. *Podoscirtus lineiceps* Chopard, 1929 and *Aphonormorphus pallipes* Chopard, 1929 (Mentawi Islands near Sumatra) considered in Otte's catalogue as representatives of *Munda* and *Aphonoides* very probably belong to Aphonoidini. They have only inner tympanum and non-parallel venation in the lateral tegminal part, but it is impossible to include them in any of the genera with such characters before study of their male genitalia, as their coloration lacks some important characters sometimes allowing me to give provisional generic determination for species known only from females. The generic and tribal position of *Aphonoides pubescens* Chopard, 1940 (Java and Borneo) is also unclear, as this species is almost undescribed (see the notes about *A. karnyi*).

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