

Partial revision of the subfamily Itarinae (Orthoptera: Gryllidae)

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The subfamily Itarinae consists of 2 genera: *Itara* Walk. with 7 subgenera (4 new) and 36 species (20 new), and *Parapentacentrus* Shir. with 3 species. *Gryllitara* Chop. and *Phormincter* Sauss. hitherto placed in synonymy with *Itara* are considered as subgenera. Discussion about systematic position of Itarinae, keys to all taxa, redescriptions, descriptions of hitherto unknown females, and new data on geographical distribution of several forms, are given.

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Introduction

The first representative of this subfamily was described in 1842 (Haan, 1842: *Gryllus* (*Phalangopsis*) *microcephalus*). The second species and a new genus for it were described in 1869 (Walker, 1869: *Itara sericea*). Later Saussure (1878) established the genus *Phormincter* for Haan's species and the group ("legion") Phormincterites for the genera *Phormincter* and *Heterotrypus* Saussure, 1878. Kirby (1906) named this group as "Eneopterinae B" and synonymized the generic and specific names *Itara sericea* and *Phormincter microcephalus*. Shiraki (1930) renamed Phormincterites as Itarinae and described a new genus and species *Parapentacentrus formosanus* (as a representative of the subfamily Pentacentrinae). Chopard (1925, 1930, 1931, 1940, 1968, 1969) described further species and 2 genera of Itarinae, but his opinion about composition of Itarinae remained similar to that of Saussure. Gorochov (1985, 1988, 1990, 1995, 1996) transferred the former genera *Phaloria* Stål, 1877 (including *Heterotrypus* and several related genera) and *Tremellia* Stål, 1877 from Itarinae to a separate subfamily Phaloriinae (originally described as a tribe of Podoscirtinae), removed from Itarinae the genus *Schizotrypus* Chopard, 1954 (which is maybe related to Phaloriinae), synonymized the generic names *Parapentacentrus* and *Pseuditara* Chopard, 1969, described 8 additional

species of Itarinae, and resurrected the name *Itara sericea* from synonyms of *I. microcephala*. Otte (1994) united again Itarinae and Phaloriinae (quite unrelated groups of Gryllidae) without any justification of this action.

A list of collections holding Itarinae types or examined material, with their abbreviations and the number of preserved types, is given below: Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZIAS; 16 types); Natural History Museum, London, UK (BMNH; 13); Sarawak Museum, Kuching, Malaysia (SMKM; 4); Deutsches Entomologisches Institut, Eberswalde, Germany (DEIE; 1); Division of Entomology and Zoology, Department of Agriculture, Bangkok, Thailand (DEZB; 1); Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (MNHU; 1); Museum National d'Histoire Naturelle, Paris, France (MNHN; 1); Taiwan Museum, Taipei, China (TMTC; 1); Zoological Museum of Moscow University, Moscow, Russia (ZMMU; 1); Forschungs-Institut und Natur-Museum "Senckenberg", Frankfurt am Main, Germany (FNSF; none).

Subfamily ITARINAE Shiraki, 1930

- = Phormincterites Saussure, 1878 (based on *Phormincter* now considered a subgenus of *Itara*).
- = "Eneopterinae B": Kirby, 1906 (partly).

Characteristics. Crickets medium-sized. Head almost spherical, rather small; eyes in middle part of head (not displaced upwards or downwards); hypopharyngeal proboscis usually more or less developed, with pseudotracheae, drawn inside hypopharynx in normal condition (Fig. 188), sometimes this rudimentary (Fig. 177). Tegmina and hind wings usually long, longer than body, but sometimes tegmina slightly and hind wings strongly shortened (Figs 1, 7); male stridulatory apparatus usually developed, with large stridulatory areas, more or less numerous oblique veins, 1 dividing vein of mirror, usually primitive (Figs 1, 6, 7) and sometimes modified (as in most Podoscirtinae) (Fig. 9) venation near distal edge of mirror; sometimes stridulatory apparatus lost in consequence of feminization; apical area of male tegmina developed. Metanotal gland developed, large (Figs 3-5, 8, 169, 181). Fore tibiae with large both (outer and inner) tympana; outer one smaller and open; inner one larger and slightly immersed (almost open) (Fig. 176) or slit-like (Fig. 2); hind femora normally thickened; hind tibiae with small denticles in proximal half and articulated large spines and spurs in distal half; hind tarsi with denticulated first segment (Fig. 1); all tarsi with widened second segment (adaptation to phytophilous habits). Male genitalia with articulated epiphallus, ectoparameres, endoparameres, and rami; spermatophore sac developed, similar to that of Gryllinae and Gryllomorphini; endoparameres also rather similar to those of these taxa, but their proximal transverse parts situated under spermatophore sac (Figs 10-21, 165-167) (above spermatophore sac in Gryllinae and Gryllomorphini). Ovipositor typical of Gryllidae, with weakly separated, smooth, digging apex (Figs 178, 189).

Included genera. Two Indo-Malayan genera: *Itara* Walker, 1869 and *Parapentacentrus* Shiraki, 1930.

Mode of life. The larvae of Vietnamese representatives of *Itara* are rather common in autumn and winter. They live among dry leaves on the forest floor together with the forest Gryllinae and are very similar to their larvae. The adults of Vietnamese species of *Itara* are most numerous in spring and early summer, live in similar habitats, but their behaviour is different – they quickly fly out from under our feet, fly 10-15 m, and hide among leaves of forest floor again. This behaviour looks like that of many tropical for-

est Blattodea. At night, these adults alight on the leaves of living bushes or the lower branches of trees for stridulation and copulation. Their song is very loud and ringing (for information about song of *Itara* see Heller, 1985). Sometimes a great many specimens are assembled on the leaves of alone bush for stridulation and copulation. During copulation a female sits on the back of a male under his elevated tegmina and eats the special attractive secretion from his metanotal gland. The eggs are deposited into more or less loose soil. The larvae and the adults use mainly vegetable food. They are characteristic of dense primary forests as well as of secondary and strongly thinned out forests. The adults of *Itara* and *Parapentacentrus* are often attracted by light in the forest or its vicinity (the representatives of the latter genus were collected by me only at light).

Position in the family Gryllidae. Earlier authors (Saussure, 1878; Chopard, 1969) included Itarinae sensu Saussure (including Phaloriinae) together with Eneopterinae and Podoscirtinae in a separate taxon which was characterized by them by the dilated second tarsal segments (adaptive character) and the presence of small denticles as well as large articulated spines and spurs on the hind tibiae (plesiomorphy). These authors distinguished Itarinae sensu Saussure from Eneopterinae and Podoscirtinae by the length of hind tarsi, length of spines and spurs of hind tibiae, size of head, width of male tegmina, number of oblique veins, and insignificant peculiarities of the shape of frontal rostrum and eyes. All these characters are strongly variable or parallel adaptations to partly similar mode of life. There is a more interesting similarity between Itarinae sensu Gorochoy (without Phaloriinae) and Gryllinae, Gryllomorphinae, Gryllomiminae which consists of the presence of hypopharyngeal proboscis lacking in all other Gryllidae (Gorochoy, 1986, 1995). This character is present in some other families of Grylloidea (for example Mogoplistidae) and must be considered as plesiomorphy, but its retention in these taxa of Gryllidae only correlates with their almost unique more or less spherical head (synapomorphy).

Key to genera of *Itarinae*

1. Fore tibiae with slit-like inner tympanum (Fig. 2).
 - Male tegmina with stridulatory apparatus *Itara* Walk.

- Fore tibiae with open inner tympanum (Fig. 176). Male tegmina without stridulatory apparatus **Parapentacentrus** Shir.

Genus **Itara** Walker, 1869

Type species *Itara sericea* Walker, 1869, Bangladesh.

Diagnosis. Head round; hypopharyngeal proboscis more or less developed (Fig. 188). Male tegmina more or less wide, with stridulatory apparatus: stridulatory areas large, oblique veins numerous, mirror with 1 dividing vein. Metanotal gland large, various (Figs 3-5, 8). Fore tibiae more or less inflated, with open outer and slit-like inner tympana (Fig. 2). Male anal plate simple (without any processes). Male genitalia various.

Included subgenera. *Itara*, *Gryllitara* Chopard, 1931, stat. n., *Phormincter* Saussure, 1878, stat. n., *Noctitara* subgen. n., *Singitara* subgen. n., *Micritara* subgen. n., and *Bornitara* subgen. n.

Key to subgenera of *Itara* for males

1. Ectoparameres with more or less thin and curved apical part strongly protruding behind apex of epiphallus (Figs 19-21, 32-43, 45, 47, 49-56, 70, 73, 79, 85, 93, 98, 102, 106, 110, 141-143) 2
 - Apical part of ectoparameres widened (Figs 18, 124-140, 145-148) and/or clearly not extending to apex of epiphallus (Figs 11, 12, 14, 15, 150, 151, 153, 154, 156, 157, 159, 160, 162-164) 3
2. Epiphallus with 3 distal processes: large unpaired medial and pair of medium-sized lateral; ectoparameres with C-shaped apical part (Figs 19-21, 70, 73, 79, 85, 93, 98, 102, 106, 110) **Itara** s.str.
 - Epiphallus without medium-sized lateral distal processes, but with pair of more or less sloping lower lobes at middle part; ectoparameres usually with rather S-shaped apical part (Figs 32-47, 49-56, 141-143) **Phormincter** Sauss., stat. n.
3. Upper surface of epiphallus with large denticles; ectoparameres with widened apical part (Figs 124-140, 144-148) 4
 - Upper surface of epiphallus without large denticles; ectoparameres various (Figs 10-18, 149-164) 5
4. Epiphallus with rather complicated upper structure at apical part and with large denticles only at proximal part of upper surface; ectoparameres distinctly not extending to apex of epiphallus (Figs 144-148) **Singitara** subgen. n.
 - Epiphallus with only simple acute upper projection at apical part and with large denticles at middle and distal parts of upper surface; ectoparameres very slightly protruding behind apex of epiphallus (Figs 124, 125, 127, 129-140) **Noctitara** subgen. n.
5. Epiphallus with 3 long distal processes: pair of lateral and unpaired very long and charac-

- teristically curved medial; ectoparameres with more or less thin apical part distinctly not extending to apex of epiphallus (Figs 10-15) **Gryllitara** Chop., stat. n.
 - Epiphallus without long lateral processes; ectoparameres various (Figs 16-18, 149-164) 6
- 6. Epiphallus short; ectoparameres large, strongly widened at apical part protruding behind apex of epiphallus (Figs 16-18) **Micritara** subgen. n.
 - Epiphallus long; ectoparameres small, without strong widening at apical part distinctly not extending to apex of epiphallus (Figs 149-164) **Bornitara** subgen. n.

Subgenus **Gryllitara** Chopard, 1931, stat. n.

Type species *Gryllitara pendleburyi* Chopard, 1931, Malacca.

Diagnosis. Male tegmina with large and slightly transverse mirror; all oblique veins normal, but distal part of longest of them forming small cell (Figs 7, 9). Male genitalia with large epiphallus and small spermatophore sac; epiphallus with 3 distal processes: unpaired medial very long (with smooth and characteristically curved apical part) and paired lateral short; upper surface of epiphallus without numerous denticles; ectoparameres dilated in proximal part and narrowing towards apex, but not extending to apex of medial process of epiphallus (Figs 10-15).

Included species. Type species and *I. (G.) diligens* sp. n.

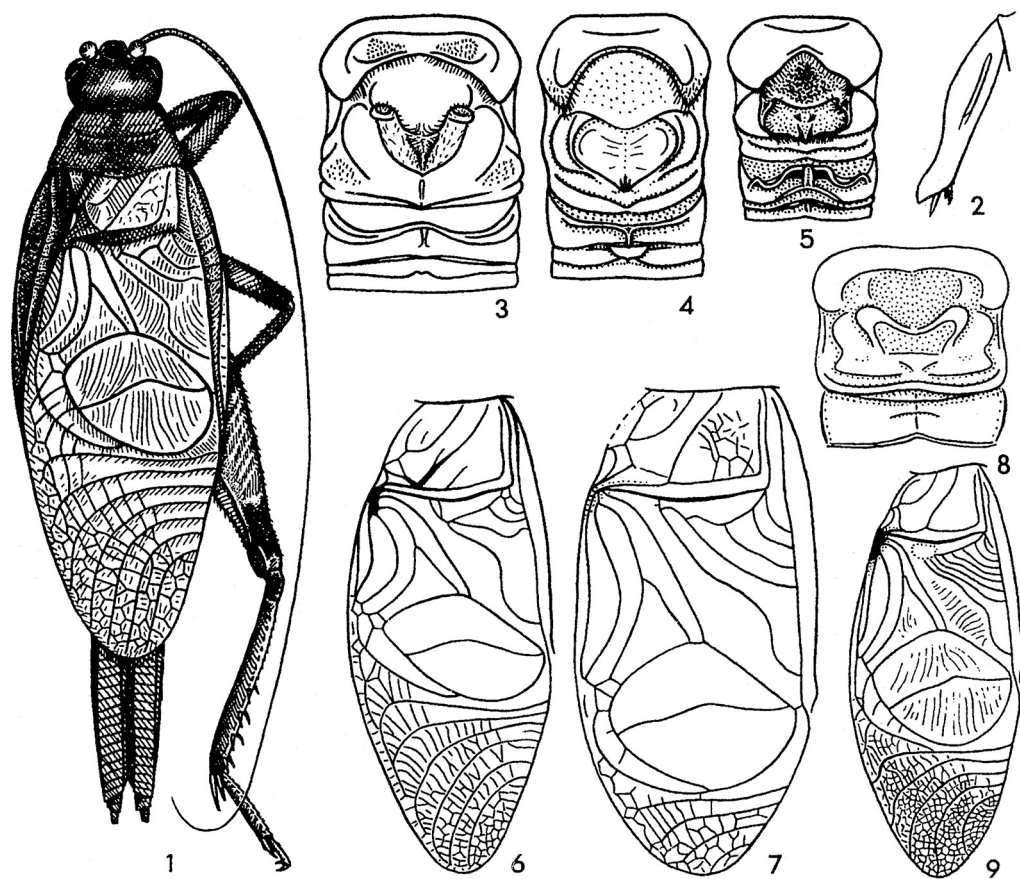
Note. This taxon was originally described as a genus (Chopard, 1931).

Key to species of the subgenus *Gryllitara* for males

1. Ectoparameres with distinct upper process at proximal part and almost without narrow curved apical part (Fig. 12). Width of antennal cavities almost equal to distance between them. Tegmina with about 5 oblique veins and short apical area (Fig. 7). Malacca . . . **I. (G.) pendleburyi** (Chop.)
 - Ectoparameres without distinct upper process at proximal part and with rather long narrow curved apical part (Fig. 15). Width of antennal cavities distinctly less than distance between them. Tegmina with about 9 oblique veins and long apical area (Fig. 9). Sumatra **I. (G.) diligens** sp. n.

Itara (Gryllitara) pendleburyi (Chopard, 1931), comb. n.
(Figs 7, 8, 10-12)

Holotype. ♂, Malacca, "Pahang. F.M.S. Fraser's Hill. 3500'-4500'. Aug. 12th 1923. H.M. Pendlebury. Brit. Mus. 1937-197" (BMNH).



Figs 1-9. *Itara*, ♂. 1, 2, *I. (Itara) vietnamensis* Gor. (Vinh Phu); 3, *I. (Noctitara) nocturna* Gor.; 4, *I. (Phorminctor) melanocephala* Gor. (holotype); 5, *I. (Ph.) similis* Gor. (holotype); 6, *I. (Micritara) minuta* Chop. (lectotype); 7, 8, *I. (Gryllitara) pendleburyi* (Chop.); 9, *I. (G.) diligens* sp. n. General view from above (1); inner side of fore tibia (2); metanotal gland from above (3-5, 8); dorsal part of tegmen (6, 7, 9).

Description. Male (holotype). Head rather large; width of antennal cavities almost equal to distance between them; upper half of head light brown with slightly darkened rostrum (between ocelli) and hind part of vertex; lower half of head darker, brown (almost dark brown); antennae and palpi brown. Pronotum slightly narrowing in front, almost uniformly brown (lateral lobes very slightly darker than disc). Tegmina not very wide, with 5 oblique veins and comparatively shortened apical area; coloration of tegmina light brown with semi-transparent stridulatory areas; hind wings strongly shortened (f. brachyptera). Fore tibiae al-

most not inflated and with not very large tympana; fore and middle legs light brown with slightly darkened tibiae and tarsi; hind legs lost. Abdomen above brownish; thorax and abdomen beneath light brownish; cerci light brown. Genitalia as in Figs 10-12, with distinct upper process at proximal part of ectoparameres and with not narrow and almost not curved apical part of ectoparameres.

Female unknown.

Length. Body 18 mm; body with wings 18 mm; pronotum 2.8 mm; tegmina 13.5 mm.

Note. This species was originally described in the genus *Gryllitara* (Chopard, 1931).

***Itara (Gryllitara) diligens* sp. n.**

(Figs 9, 13-15)

Holotype. ♂, Sumatra, "Sungei Kumbang. Koriachi" (ZMMU).

Description. Male (holotype). Head small; rostrum between antennal cavities 1.4 times as wide as antennal cavities; upper half of head brown with dark brown part between ocelli and rather light brown parts behind eyes; lower half of head, palpi, and antennae rather light brown. Pronotum very strongly narrowing in front, almost uniformly more or less light brown with indistinct small lighter spot in fore lower corner of lateral lobes. Tegmina wide, with 9 oblique veins and more or less long apical area; coloration of tegmina light brownish, semi-transparent. Hind wings very long (f. macroptera). Fore tibiae inflated and with large tympana; fore and middle legs light brown with darkish tibiae and tarsi; hind legs lost. Abdomen above brownish; thorax and abdomen beneath light brownish; cerci light brown. Genitalia as in Figs 13-15, without distinct upper process at proximal part of ectoparameres and with rather long narrow curved apical part of ectoparameres.

Female unknown.

Length. Body 14.5 mm; body with wings 23 mm; pronotum 2.2 mm; tegmina 17 mm.

Subgenus **Phormincter** Saussure, 1878, stat. n.

Type species *Gryllus (Phalangopsis) microcephalus* Haan, 1842, Sumatra.

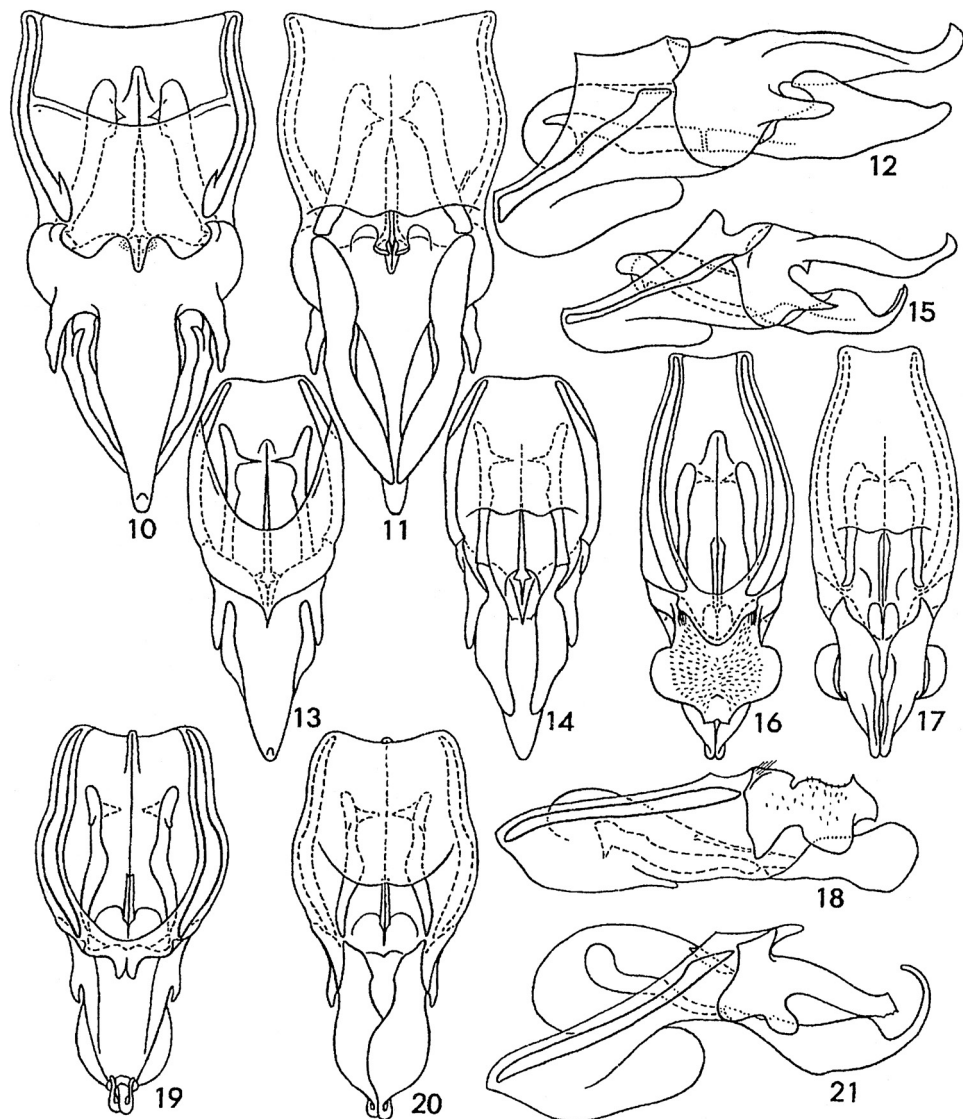
Diagnosis. Male tegmina with large or medium-sized distinctly transverse mirror; all oblique veins normal, but distal part of longest of them forming large cell (Figs 22-31). Male genitalia with rather small epiphallus and rather large spermatophore sac; epiphallus without paired distal lateral processes, but with more or less rounded lobe-like lower lateral edges of middle part and usually denticulated lower edges of apical part; upper surface of epiphallus without numerous distinct denticles; ectoparameres dilated in proximal part and narrowing towards apex; their apical part strongly protruding behind apex of epiphallus (Figs 32-56).

Included species: type species, *Itara major* Chopard, 1930, *I. mjobergi* Chopard, 1930, *I. melanocephala* Gorochov, 1988, *I. similis* Gorochov, 1988, *I. (Ph.) kerzhneri* sp. n., *I. (Ph.) proxima* sp. n., *I. (Ph.) popovi* sp. n., *I. (Ph.) raggei* sp. n., *I. (Ph.) uvarovi* sp. n., and *I. (Ph.) johni* sp. n.

Note. Here this former generic name is resurrected from synonyms of *Itara* as subgeneric one.

Key to species of the subgenus *Phormincter* for males

1. Apical part of epiphallus almost without narrowing in profile; upper process of this part moved more proximally from apex of epiphallus (Figs 34, 37, 40, 43-45, 47, 48, 55, 56, 143) 2
 - Apical part of epiphallus distinctly narrowing in profile; upper process of this part situated at apex of epiphallus (Figs 51, 52) 10
2. Apical part of epiphallus without large teeth at both lower edges (Figs 43-45, 47, 48, 55) 3
 - Apical part of epiphallus with 1 or 2 large acute-angled or right-angled teeth at both lower edges (Figs 34, 37, 40, 56, 143) 6
3. Apical part of epiphallus widened in profile (Fig. 55). Size rather large (length of pronotum 2.8 mm). Mirror of tegmina not strongly transverse (Fig. 24). Kalimantan **I. (Ph.) uvarovi** sp. n.
 - Apical part of epiphallus not widened in profile (Figs 43-45, 47, 48) 4
4. Ectoparameres almost straight (Fig. 45). Size rather large (length of pronotum 2.3-2.6 mm; length of hind femora 9.5-10 mm). Mirror of tegmina rather strongly transverse (Fig. 23). Java **I. (Ph.) melanocephala** Gor.
 - Ectoparameres strongly S-shaped (Figs 43, 44) 5
5. Ectoparameres with long distal part (Fig. 43). Size rather large (length of pronotum 2.8-3 mm; length of hind femora 10.5-11 mm). Mirror of tegmina rather strongly transverse (Fig. 22). Sumatra **I. (Ph.) microcephala** (Haan)
 - Ectoparameres with short distal part (Fig. 47). Size rather small (length of pronotum 1.9-2.2 mm; length of hind femora 8-9 mm). Mirror of tegmina not strongly transverse (Fig. 25). Sumatra, Malacca **I. (Ph.) similis** Gor.
6. Apical part of epiphallus with several teeth at both lower edges; lobe of lower lateral edges of distal half of epiphallus rather small (Figs 34, 37, 40, 143) 7
 - Apical part of epiphallus with 1 tooth at both lower edges; lobe of lower lateral edges of distal half of epiphallus rather large (Fig. 56). Size large (length of hind femora 12 mm). Mirror of tegmina not very wide, its width almost equal to length of diagonal vein (Fig. 30). Kalimantan **I. (Ph.) major** Chop.
7. Epiphallus with large concavity of upper edge in profile and with high apical part (Fig. 143). Size large (length of pronotum 3.5 mm; length of hind femora 12 mm). Mirror of tegmina rather strongly transverse (Fig. 118). Singapore **I. (Ph.) johni** sp. n.
 - Epiphallus without large concavity of upper edge in profile and with not high apical part (Figs 34, 37, 40) 8
8. Ectoparameres with short distal part (Fig. 40). Size rather large (length of pronotum 2.9 mm; length of hind femora 11 mm). Mirror of tegmina



Figs 10-21. *Itara*, ♂. 10-12, *I. (Gryllitara) pendleburyi* (Chop.); 13-15, *I. (G.) diligens* sp. n.; 16-18, *I. (Micritara) mimuta* Chop. (lectotype); 19-21, *I. (Itara) vietnamensis* Gor. (Vinh Phu). Genitalia from above (10, 13, 16, 19), from below (11, 14, 17, 20), and from side (12, 15, 18, 21).

- rather strongly transverse (Fig. 24). Malacca . . .
 **I. (Ph.) popovi** sp. n.
 - Ectoparameres with long distal part (Figs 34, 37) 9
 9. Ectoparameres strongly S-shaped (Fig. 37). Size rather large (length of pronotum 2.7 mm; length of hind femora 10 mm). Mirror of tegmina not strongly transverse, but larger (Fig. 27). Malacca
 **I. (Ph.) proxima** sp. n.
 - Ectoparameres slightly S-shaped (Fig. 34). Size rather large (length of pronotum 2.7-2.9 mm; length of hind femora 10.5-11 mm). Mirror of

- tegmina not strongly transverse, but smaller (Fig. 26). Malacca **I. (Ph.) kerzhneri** sp. n.
 10. Ectoparameres with comparatively short distal part (Fig. 51). Size rather small (length of pronotum 1.8 mm; length of hind femora 7.5 mm). Tegmina with 6 oblique veins; mirror rather strongly transverse, its width distinctly greater than length of diagonal vein (Fig. 29). Kalimantan
 **I. (Ph.) raggei** sp. n.
 - Ectoparameres with long distal part (Fig. 52). Tegmina with 8 oblique veins; width of mirror almost equal to length of diagonal vein (Fig. 31). Kalimantan **I. (Ph.) mjobergi** Chop.

***Itara (Phormincter) microcephala* (Haan, 1842)**

(Figs 22, 41-44)

Neotype. ♂, **Sumatra**, "N. Sumatra. SW of Kisaran. 2° 42' 18" N, 99° 22' 42" E. 5.3.1994. Leg. Sivec, I." (ZIAS).

Material. **Sumatra**: 1 ♂, "Deli auf Sumatra. Hurferf. Fruhstorfer" (MNHU).

Description. Male (neotype). Similar to above-mentioned male from MNHU which has been described recently (Gorochov, 1996: Figs 1, 11-13), but head with light part under medial ocellus and almost without light stripes on vertex, other parts of body more uniform, epiphallus with more distinct notch at lower edges of apical part (for comparison see Figs 43, 44).

Female unknown to me.

Length (neotype). Body 16.5 mm; body with wings 27 mm; pronotum 3 mm; tegmina 19 mm; hind femora 11 mm.

Note. This species was originally described as *Gryllus (Phalangopsis) microcephalus* (Haan, 1842). Its syntypes from Sumatra and Japan should be deposited in National Natuurhistorisch Museum (Leiden), but evidently these specimens are lost (letter of 29.IV.1996 by Dr. M. Laterveer-de Beer, assistant curator of Orthoptera of above-mentioned museum). I designate here a neotype of this species as it is the type species of the subgenus *Phormincter*.

***Itara (Phormincter) melanocephala* Gorochov, 1988**

(Figs 4, 23, 45, 46)

Holotype. ♂, **Java**, "Tjibodas. 16-17.VII.1930. Coll. Karny" (ZIAS).

Material. **Java**: 1 ♀ (paratype), same data as holotype (ZIAS); 1 ♂, "Pradjekan. Java. A. Heyne. Berlin-Wilm." (DEIE).

Note. The description of the type material has been published quite recently (Gorochov, 1988: Figs 79-83). The male from DEIE is similar to the holotype, but lighter. Its ectoparameres have a long apical part (Fig. 45). The distal half of this apical part in the holotype is broken off (Fig. 46). This is the cause of a mistake in the previous drawings of the holotype male genitalia (Gorochov, 1988: Figs 79-81; Gorochov, 1996: Fig. 14).

***Itara (Phormincter) uvarovi* sp. n.**

(Figs 24, 53-55)

Holotype. ♂, **Kalimantan**, "Sarawak: 1909. C.J. Brooks. B.M. 1931-570" (BMNH).

Description. Male (holotype). Head rather small; rostrum between antennal cavities 1.2 times as wide as antennal cavities; upper half of head brown with light brown areas behind eyes and elongated spot along lateral edge of rostrum and between lateral ocellus and fore half of upper edge of eye; lower half of head and palpi light brown; antennae brownish with lighter scape. Pronotum strongly narrowing in front, almost uniformly light brown with slightly lighter lateral lobes. Tegmina with 6 oblique veins, not strongly transverse mirror, and rather long apical area; coloration of tegmina uniformly light brownish; hind wings very long (f. macroptera). Fore tibiae inflated, with large tympana; fore and middle legs light brown with darkish 1st segment of tarsi; hind legs missing. Thorax beneath, abdomen, and cerci light brown. Genitalia as in Figs 53-55; apical part of epiphallus widened in profile and with small teeth at both lower edges.

Female unknown.

Length. Body 14.5 mm; body with wings 25 mm; pronotum 2.8 mm; tegmina 19 mm.

Etymology. The species is named in memory of the famous orthopterist Prof. B.P. Uvarov.

Note. This specimen was determined by Chopard as *I. microcephala*.

***Itara (Phormincter) similis* Gorochov, 1988**

(Figs 5, 25, 47, 48)

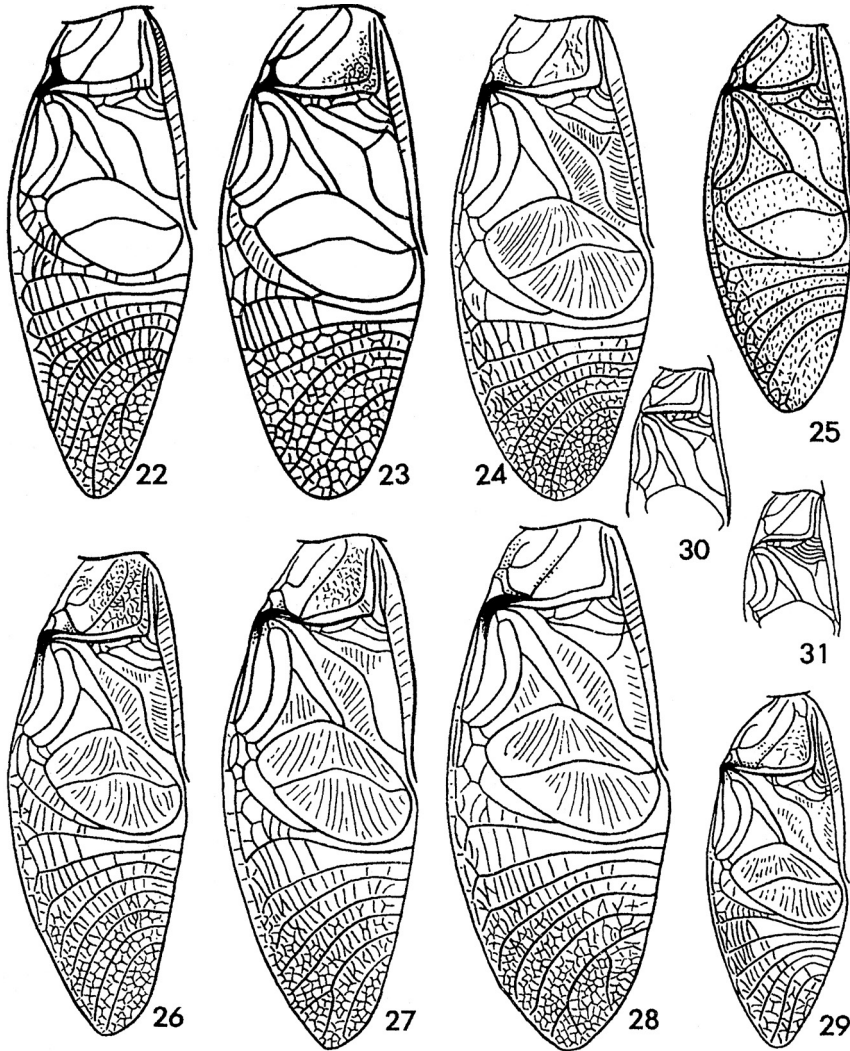
Holotype. ♂, **Sumatra**, "Namay. 1907, 10.VI. O. John" (ZIAS).

Material. **Sumatra**: 9 ♂, 8 ♀, "N. Sumatra. SW of Kisaran. 2° 42' 18" N, 99° 22' 42" E. 5-6.3.1994. Leg. Sivec, I." (ZIAS); 1 ♀, "N. Sumatra. W. Pematang Siantar. 750 m. 23.02.1994. Leg. Sivec, I." (ZIAS).

Malacca: 1 ♂, 1 ♀, "Malaysia: Hulu, Perak. Belum Expedition, B. Camp. 5° 30' 07" N, 101° 26' 21" E. 4-7.4.1994. 250 m. Leg. I. Sivec" (ZIAS).

Description. Female (nov.). Head similar to that of *I. (Ph.) uvarovi*, but light brown spot between lateral ocellus and fore half of upper edge of eye less distinct and antennae more uniformly coloured. Pronotum with similar coloration, but slightly narrowing in front. Tegmina uniformly brownish grey, rather light; hind wings very long (f. macroptera). Hind legs light brown with slightly darkened apical part of femora. Other parts of body as in previous species. Ovipositor rather long.

Male. Description of the holotype has been published quite recently (Gorochov, 1988: Figs 84-88). Other males are similar to it, but the specimen from Malacca has some-



Figs 22-31. *Itara* (*Phormincter*), ♂. 22, *I. microcephala* (Haan); 23, *I. melanocephala* Gor. (holotype); 24, *I. uvarovi* sp. n.; 25, *I. similis* Gor. (holotypus); 26, *I. kerzhneri* sp. n. (holotype); 27, *I. proxima* sp. n.; 28, *I. popovi* sp. n.; 29, *I. raggei* sp. n.; 30, *I. major* Chop. (Chopard, 1930); 31, *I. mjobergi* Chop. (Chopard, 1930). Dorsal part of tegmen (22-29) and its proximal half (30, 31).

what more angulate apex of epiphallus (for comparison see Figs 47, 48).

Length. Body: ♂ 12-15 mm, ♀ 11-14 mm; body with wings: ♂ 19-21 mm, ♀ 18-21 mm; pronotum: ♂ 1.9-2.2 mm, ♀ 2-2.2 mm; tegmina: ♂ 13-15 mm, ♀ 12-14 mm; hind femora: ♂ 8-9 mm, ♀ 8-9 mm; ovipositor 8.5-9 mm.

***Itara* (*Phormincter*) *kerzhneri* sp. n.**
(Figs 26, 32-34)

Holotype. ♂, Malacca, "Malaysia: Hulu, Perak. Belum Expedition, B. Camp. 5° 30' 07" N, 101° 26'

21" E. IV-VI.1994. Leg. Rothamsted. Light Trap" (ZIAS).

Paratypes. Malacca: 5 ♂, 22 ♀, same data as holotype, but VIII.1993-VI.1994 (ZIAS).

Description. Male (holotype). Head medium-sized; rostrum between antennal cavities 1.1 times as wide as antennal cavities; coloration of head as in *I. (Ph.) uvarovi*. Pronotum rather strongly narrowing in front, brown, but slightly lighter than upper part of head and with light brown stripe along lower and hind edges of lateral lobe. Tegmina with 5 distinct oblique veins, not

strongly transverse and not very large mirror, and long apical area; coloration of tegmina brownish with light brownish basal part of dorsal surface and almost dark brown apical area; hind wings very long (f. macroptera). Fore tibiae inflated, with large tympana; fore and middle legs light brown with very slightly darker tibiae (except light basal part); hind femora light brown with numerous narrow oblique brown stripes on external surface and several small brown spots on apical part; hind tibiae brown (except light basal part, spines, and spurs). Thorax and abdomen beneath (except genital plate) light brown; abdomen above somewhat darker; genital plate brownish grey; cerci light. Genitalia as in Figs 32-34; apical part of epiphallus without widening in profile and with 2 large teeth at both lower edges; ectoparameres long and slightly S-shaped.

Variations. Sometimes tegmina with 6 oblique veins and not light basal part of dorsal surface.

Female. Similar to male, but pronotum only slightly narrowing in front and with indistinct light brown stripe along hind edge of lateral lobe or almost without this stripe. Tegmina and ovipositor as in *I. (Ph.) similis* (small females of the new species are almost indistinguishable from females of the latter species).

Length. Body: ♂ 14-17 mm, ♀ 12-16 mm; body with wings: ♂ 26-30 mm, ♀ 24-28 mm; pronotum: ♂ 2.7-2.9 mm, ♀ 2.3-2.9 mm; tegmina: ♂ 17-19 mm, ♀ 16-18 mm; hind femora: ♂ 10.5-11 mm, ♀ 9.5-11.5 mm; ovipositor 9-12 mm.

Etymology. The species is named in honour of the Russian entomologist Dr. I.M. Kerzhner.

***Itara (Phormincter) proxima* sp. n.**

(Figs 27, 35-37)

Holotype. ♂, **Malacca**, "Malaysia: Hulu, Perak. Belum Expedition. Sungai Enam, Subcamp. 850 m. 11-12.4.1994. Leg. I. Sivec" (ZIAS).

Paratypes. **Malacca:** 4 ♀, same data as holotype (ZIAS).

Description. Male (holotype). Similar to *I. (Ph.) kerzhneri*, but rostrum between antennal cavities 1.2 times as wide as antennal cavities, upper part of head darker (dark brown) and with indistinct light spot between lateral ocellus and fore half of upper edge of eye, pronotum darker (almost dark brown with small lightish spot in fore lower corner of lateral lobes), tegmina with notice-

ably larger mirror, greyish and semi-transparent with almost dark brown apical area and dark longitudinal veins along upper edge of lateral area, apical part of femora darkened (in fore and middle legs rather slightly and in hind legs strongly), and genitalia (Figs 35-37) with strongly S-shaped ectoparameres.

Female. Similar to male, but pronotum only slightly narrowing in front and its lateral lobes sometimes with small lightish spot near hind edge or with lightish stripe along lower edge. Tegmina and ovipositor as in previous species (females of the new species are similar to those of both other species of this subgenus from the nearest locality, but distinguished by the distinctly darker apical part of hind femora).

Length. Body: ♂ 16 mm, ♀ 13-15 mm; body with wings: ♂ 27 mm, ♀ 26-28 mm; pronotum: ♂ 2.7 mm, ♀ 2.5-2.7 mm; tegmina: ♂ 19 mm, ♀ 16-18 mm; hind femora: ♂ 10 mm, ♀ 10-11 mm; ovipositor 9.5-10.5 mm.

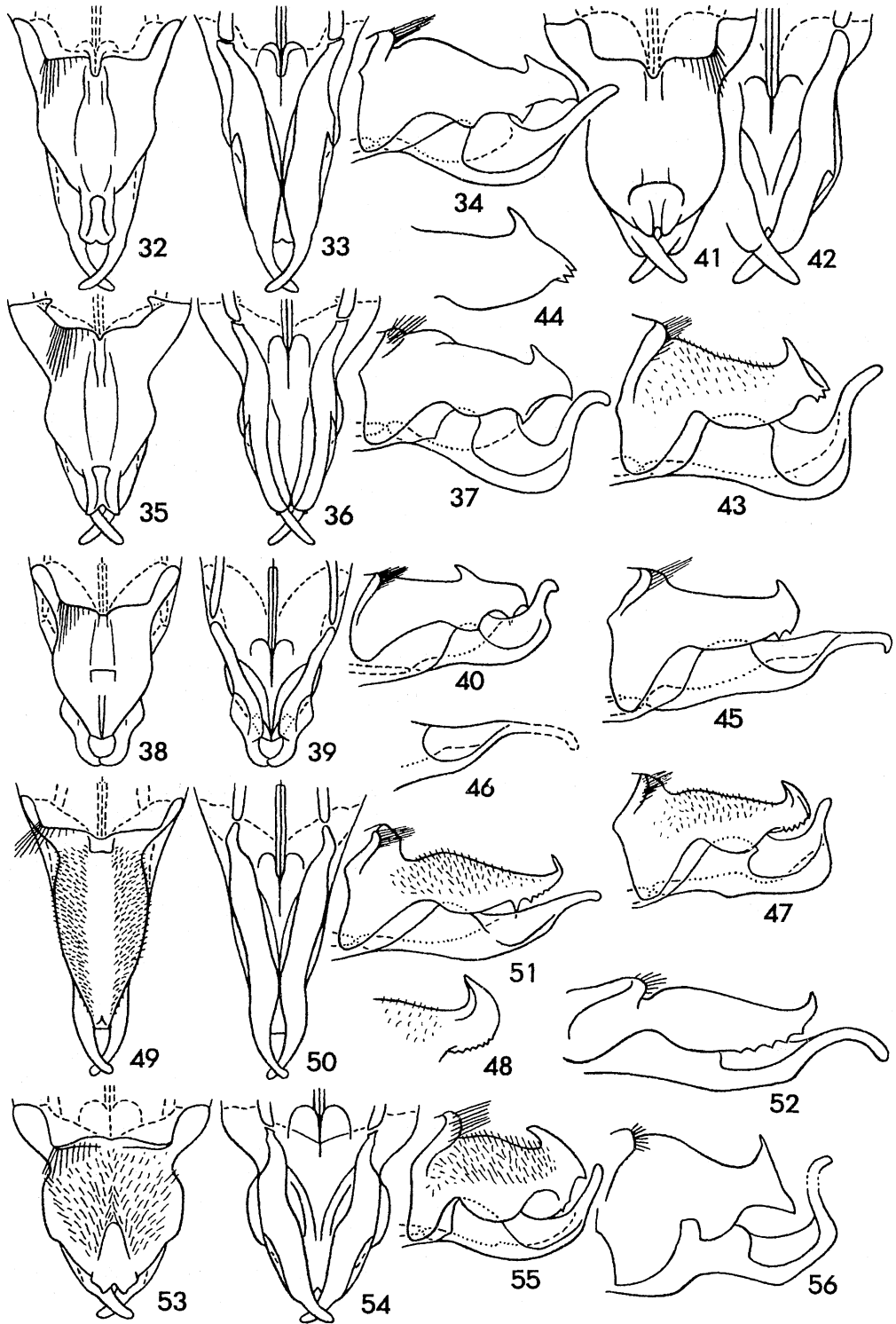
***Itara (Phormincter) popovi* sp. n.**

(Figs 28, 38-40)

Holotype. ♂, **Malacca**, "Malay penins. Pahang. F.M.S. Fraser's Hill. 4000 ft. light. 2.6.1941. Ex F.M.S. Museum. B.M. 1955-354" (BMNH).

Description. Male (holotype). Head medium-sized; rostrum between antennal cavities 1.2 times as wide as antennal cavities; upper half of head brown with light brown elongated spot along lateral edge of rostrum and between lateral ocellus and fore half of upper edge of eye; lower half of head, palpi, and antennae light brown with somewhat darker (brown or almost brown) areas behind eyes and upper half of mandibles. Pronotum strongly narrowing in front, almost uniformly brownish. Tegmina with 5 oblique veins, rather strongly transverse mirror, and long apical area; coloration of tegmina light brownish with slightly darker apical area. Hind wings very long (f. macroptera). Fore tibiae as in all previous species of this subgenus; all legs almost uniformly brownish, only hind femora with slightly darker numerous narrow oblique stripes on external surface and slightly darkened apical part (hind tibiae very slightly darkened also). Thorax beneath and abdomen as in *I. (Ph.) kerzhneri*, but distal half of cerci darker (from brownish to brown). Genitalia as in Figs 38-40, with rather short distal part of ectoparameres.

Female unknown.



Length. Body 16.5 mm; body with wings 29 mm; pronotum 2.9 mm; tegmina 20.5 mm; hind femora 11 mm.

Etymology. The species is named in honour of the British orthopterist Dr. G.B. Popov.

Note. This specimen was determined by Bhowmik as *I. microcephala*.

***Itara (Phormincter) raggei* sp. n.**

(Figs 29, 49-51)

Holotype. ♂, **Kalimantan**, "Sarawak, East Malaysia. 4th Division, Baram District. Gunong Mulu National Park. 4° 03' N/114° 56' E. 19-24.iii.1978. N.M. Collins coll. No.: (B.M./1978/11). Malaise in mixed Dipterocarp Forest" (BMNH).

Paratypes. **Kalimantan**: 3 ♀, "Sarawak: Gunong Mulu Nat. Park. R.G.S. Exped. 1977-8. J.D. Holloway et al. February-April" (BMNH and ZIAS).

Description. Male (holotype). Head rather small; rostrum between antennal cavities 1.2 times as wide as antennal cavities; upper half of head brownish with slightly darker spot between ocelli, with light brownish elongated spot along lateral edge of rostrum and between lateral ocellus and fore half of upper edge of eye, with light brownish areas behind eyes; lower half of head (from median ocellus), palpi, and antennae light brownish. Pronotum strongly narrowing in front, uniformly light brownish (almost yellowish). Tegmina with 6 oblique veins, rather strongly transverse mirror (its width distinctly greater than length of diagonal vein), and rather long apical area; coloration of tegmina light brownish with semi-transparent stridulatory areas and very slightly darker apical area. Hind wings very long (f. macroptera). Fore tibiae strongly inflated, with very large tympana; coloration of legs (including tibiae and apical part of femora) almost uniformly light brownish. Thorax beneath and abdomen (including genital plate) light brownish; cerci light brownish with very slightly darkened distal half. Genitalia as in Figs 49-51, with comparatively short distal part of ectoparameres.

Female. Similar to male, but pronotum, tegmina, and ovipositor as in *I. (Ph.) similis*. Sometimes vertex with light band along its hind edge.

Length. Body: ♂ 12.5 mm, ♀ 12-13 mm; body with wings: ♂ 20 mm, ♀ 20-23 mm; pronotum: ♂ 1.8 mm, ♀ 1.8-2.1 mm; tegmina: ♂ 13.7 mm, ♀ 13-14 mm; hind femora: ♂ 7.7 mm, ♀ 7.5-9 mm; ovipositor 7.5-8.5 mm.

Etymology. The species is named in honour of the British orthopterist Dr. D.R. Ragge.

***Itara (Phormincter) mjobergi* Chopard, 1930**

(Figs 31, 52)

Note. The species is known only from the original description (Chopard, 1930: Figs 54, 55) based on the type material from Kalimantan, Sarawak: 1 ♂ ("Baram Station") and 1 ♀ ("Pah Trap"). These syntypes must be deposited in SMKM, but Otte (1994) notes that they are "not found in Kuching". This species is similar to *I. (Ph.) raggei*, but the oblique veins of male tegmina are more numerous (8), width of mirror almost equal to length of diagonal vein, distal part of ectoparameres distinctly longer (for comparison see Figs 51, 52), and probably apical part of hind femora darkened (as it has "general habitus of *I. minor*").

***Itara (Phormincter) major* Chopard, 1930**

(Figs 30, 56)

Note. The original description (Chopard, 1930: Figs 52, 53) is based on the type material from Kalimantan, Sarawak: 1 ♂ (lectotype, here designated) and 1 ♀ (paralectotype) from "Mt. Penrissen (alt. 3000 ft.)" (SMKM). *I. major* differs from other species of the subgenus in the more or less large size, moderate width of mirror (almost equal to length of diagonal vein) in combination with 5 oblique veins of male tegmina, and characteristic shape of the male genitalia (Fig. 56).

***Itara (Phormincter) johni* sp. n.**

(Figs 118, 141-143)

Holotype. ♂, **Singapore**, "Sing." (ZIAS).

Description. Male (holotype). Head rather small; rostrum between antennal cavities 1.1 times as wide as these cavities; coloration almost uniformly reddish brown (also of palpi

Figs 32-56. *Itara (Phormincter)*, ♂. 32-34, *I. kerzhneri* sp. n. (holotype); 35-37, *I. proxima* sp. n.; 38-40, *I. popovi* sp. n.; 41-44, *I. microcephala* (Haan) (41-43, neotype); 45, 46, *I. melanocephala* Gor. (46, holotype); 47, 48, *I. similis* Gor. (47, Perak; 48, holotype); 49-51, *I. raggei* sp. n.; 52, *I. mjobergi* Chop. (Chopard, 1930); 53-55, *I. uvarovi* sp. n.; 56, *I. major* Chop. (Chopard, 1930). Distal half of genitalia from above (32, 35, 38, 41, 49, 53), from below (33, 36, 39, 42, 50, 54), and from side (34, 37, 40, 43, 45, 47, 51, 52, 55, 56); distal part of epiphallus (44, 48) and ectoparamere (46) from side.

and antennae) with very slightly lighter spots near yellowish ocelli. Pronotum very strongly narrowing in front, uniformly reddish brown. Tegmina with 5 oblique veins, rather strongly transverse mirror, and long apical area; coloration of tegmina uniformly light brown. Fore tibiae moderately inflated, with large tympana; coloration of legs uniformly light brown with slightly darkish fore tarsi (middle legs missing). Thorax beneath and abdomen (including cerci) light brown. Genitalia as in Figs 141-143; epiphallus with large concavity of upper edge in profile and with high apical part; ectoparameres S-shaped.

Female unknown.

Length. Body 19 mm; body with wings 30 mm; pronotum 3.5 mm; tegmina 20 mm; hind femora 12 mm.

Etymology. The species is named in memory of the Russian entomologist Dr. O.I. John who collected many Indo-Malayan insects (this specimen and the holotype of *I. (S.) singularis* sp. n. are possibly from his collection).

Subgenus *Itara* s. str.

Diagnosis. Similar to *Phormincter*, but epiphallus with 3 distal processes (almost as in *Gryllitara*, but unpaired median process usually with denticulated lower edges of apical part) (Figs 19-21, 57-112); sometimes shape of ectoparameres slightly different (Fig. 113).

Included species: type species, *Itara minor* Chopard, 1925, *I. vietnamensis* Gorochov, 1985, *I. abdita* Gorochov, 1996, *I. aperta* Gorochov, 1996, *I. (I.) communis* sp. n., *I. (I.) korotyaevi* sp. n., *I. (I.) kirejtshuki* sp. n., and *I. (I.) distincta* sp. n.

Key to species of the subgenus *Itara* for males

1. Apex of large median distal process of epiphallus with deep notch (Figs 72, 75, 81, 87, 92); ectoparameres with long and thin apical part, with usually strongly projected upper lobe before this part, but without tooth at base of this part (Figs 70, 73, 77, 79, 82, 84, 85, 88, 90) 2
- Apex of large median distal process of epiphallus with only shallow notch (Figs 95, 100, 104, 107, 111); ectoparameres with not thin apical part (Fig. 113), or with large inner tooth at base of this part (Figs 106, 109), or with slightly projected upper lobe before this part (Figs 93, 96, 98, 101, 102, 105) 5
2. Epiphallus with rather long proximal part and strongly curved base of its lateral parts (Figs 70,

- 71, 73, 74, 76, 78). Mirror of tegmina not strongly transverse (Figs 58, 60) 3
- Epiphallus with short proximal part and less curved base of its lateral parts (Figs 79, 80, 83, 85, 86, 89, 91). Mirror of tegmina strongly transverse (Fig. 63) 4
3. Median part of base of epiphallus very strongly curved; upper lobe of middle part of ectoparameres very wide (Figs 70, 71). Bangladesh *I. (I.) sericea* Walk.
- Median part of base of epiphallus not very strongly curved (moved towards apex); upper lobe of middle part of ectoparameres not very wide (Figs 73, 74, 76, 78). India *I. (I.) abdita* Gor.
4. Epiphallus with more or less large paired lobes at middle of base; middle part of ectoparameres with rather low and almost obtuse-angled upper lobe (Figs 85, 86, 88-91). Length of apical area of tegmina usually greater than width of dorsal part of tegmina; longest oblique vein of tegmina usually strongly S-shaped (Fig. 62). Vietnam, Southern China, Thailand . . . *I. (I.) vietnamensis* Gor.
- Epiphallus with more or less small paired lobes at middle of base; middle part of ectoparameres with rather high and almost acute-angled or right-angled upper lobe (Figs 79, 80, 82-84). Length of apical area of tegmina usually equal to width of dorsal part of tegmina; longest oblique vein of tegmina usually slightly S-shaped (Fig. 61). Northern Vietnam, Thailand *I. (I.) communis* sp. n.
5. Ectoparameres with long, thin apical part, without tooth at base of this part, and with not strongly projected upper lobe before this part (Figs 93, 96, 98, 101, 102, 105) 6
- Ectoparameres with not thin apical part (Fig. 113), or with large inner tooth at base of this part and strongly projected upper lobe before this part (Figs 106, 109) 8
6. Upper lobe of middle part of ectoparameres rather short and without long concavity (Figs 93, 96, 98, 101); base of epiphallus with more or less long median lobe provided with pair of apices (Figs 94, 97, 99). Tegmina with not very strongly transverse mirror (Figs 65, 66) 7
- Upper lobe of middle part of ectoparameres rather long, and with long concavity (Figs 102, 105); base of epiphallus without median lobe (Fig. 103). Tegmina with very strongly transverse mirror (Fig. 67). Malacca . . . *I. (I.) kirejtshuki* sp. n.
7. Upper projection of distal part of epiphallus slightly moved proximally (from apex) (Fig. 93); lateral edges of base of epiphallus (from median lobe to apodemes) strongly curved (Figs 94, 97). Tegmina with not very long apical area (Fig. 65). Northern Vietnam, Northern Thailand *I. (I.) aperta* Gor.
- Upper projection of distal part of epiphallus more strongly moved proximally (Fig. 98); lateral edges of base of epiphallus (from median lobe to apodemes) almost straight (Fig. 99). Tegmina with very long apical area (Fig. 66). Southern Vietnam *I. (I.) korotyaevi* sp. n.

8. Ectoparameres with long thin apical part and large inner tooth at its base (Figs 106, 109); base of epiphallus as in Fig. 108. Northern Vietnam, Thailand **I. (I.) minor** Chop.
 - Ectoparameres with apical part not thin and without inner tooth (Figs 110, 113); base of epiphallus as in Fig. 112. Sumatra **I. (I.) distincta** sp. n.

Itara (Itara) sericea Walker, 1869

(Figs 57, 58, 70-72)

Note. The redescription of the holotype (♂) from Bangladesh ("Silhet. 47.31"; BMNH) has been published recently (Gorochoy, 1996: Figs 6, 20-22). It is necessary only to correct a minor error in "Fig. 21" (see Fig. 71) and to add information about dimensions (length: body 22 mm, body with wings 27 mm, pronotum 2.7 mm, tegmina 18 mm, hind femora 11 mm).

Itara (Itara) abdita Gorochoy, 1996

(Figs 59, 60, 73-78)

Holotype. ♂, India, "Sikkim. Coll. Bingham" (MNHU).

Material. India: 1 ♂, Madras, "Sukna. 30.IV.1922. Fletcher Coll. Pres. by Imp. Inst. Ent. Brit. Mus. 1933-174" (BMNH).

Note. The description of the holotype has been published recently (Gorochoy, 1996: Figs 7, 23-25). The specimen from Sukna is very similar to the holotype (Figs 76-78), but pronotum almost uniformly dark brown; it was determined by Uvarov as "*Phorminctor microcephalus*".

Itara (Itara) vietnamensis Gorochoy, 1985

(Figs 1, 19-21, 62, 63, 85-92, 188, 189)

Holotype. ♂, Vietnam, prov. Vinh Phu, Tam Dao, 800-900 m, 12-13.V. 1975, L.N. Medvedev (ZIAS).

Material. Vietnam: 2 ♂, 1 ♀ (paratypes), same data as holotype (ZIAS); 12 ♂, 9 ♀, same data as holotype, but 12.VI.1994, E.S. Sugonyaev and 17.V-11.VI.1995, A.V. Gorochoy (ZIAS). China: 1 ♂, 1 ♀, "Hongkong, F.W. Terry. 1911-359" (BMNH). Thailand: 2 ♂, Nakhon Nayok, Rok Yai, "14 June 1983", "4008", "Light Trap" (DEZB and ZIAS); 1 ♂, "Kanchanaburi. May 1962", "Lot 2824" (DEZB).

Note. The description of the type material (3 ♂, 1 ♀) was published in 1985 (Gorochoy, 1985: Fig. 1, 1-4). The new material shows greater variability in coloration (from rather dark to rather light), size of median lobes of proximal edge of epiphallus (Figs 86, 89, 91), shape of ectoparameres (Figs 85, 90), and width of apical part of distal median process of epiphallus (this part is noticeably wider in the specimens from Thailand) (Figs 87, 92).

The specimens from China were determined as *I. microcephala*.

Itara (Itara) communis sp. n.

(Figs 61, 79-84)

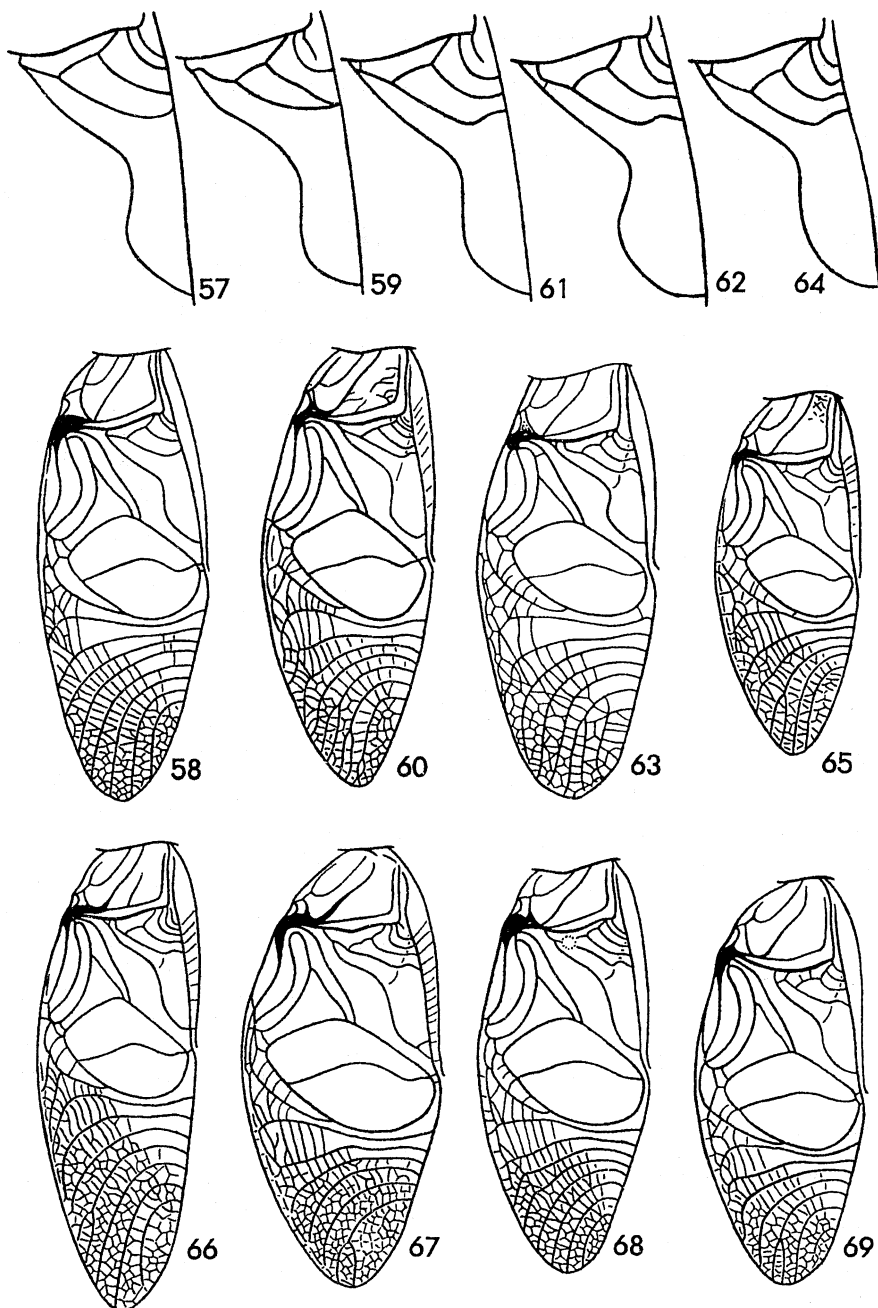
Holotype. ♂, Vietnam, prov. Son La, environs of Song Ma, 400-600 m, 3-14.V.1986, A.V. Gorochoy (ZIAS).

Paratypes. Vietnam: 10 ♂, 4 ♀, same data as holotype (ZIAS); 2 ♂, prov. Son La, town Son La, at light, 1-2.V.1986, A.V. Gorochoy (ZIAS). Thailand: 2 ♂, "Ban Tham, Chiang Dao. Chiang Mai. May 25, 1970. A.Samruadkit. Lot. 3428" (DEZB and ZIAS); 1 ♂, "Doi Yao, 2000 ft. Chom Thong. Chiang Mai. May 28, 1970. A. Samruadkit. Lot. 3431" (DEZB); 1 ♂, "Phamon, 4000 ft. Chom Thong. Chiang Mai. May 29, 1970. A. Samruadkit. Lot. 3432" (DEZB); 4 ♂, 2 ♀, "Thailand. 19 June 1985", "4061", "Light trap" (DEZB and ZIAS); 3 ♂, Doi Muk, Chom, "May 30, 1983", "3984" (DEZB and ZIAS).

Description. Male (holotype). Very similar to *I. (I.) vietnamensis*, but smaller. Rostrum between antennal cavities 1.4 times as wide as antennal cavities; upper half of head (from median ocellus) brown with wide elongated light brown band along lateral edge of rostrum, along upper edge of eye, and behind eye; lower half of head, proximal part of palpi, and base of antennae light brown; distal part of palpi and flagellum of antennae (except several proximal articles) brown. Pronotum strongly narrowing in front, light brown with cross-shaped brown spot on middle part of disc and with very wide longitudinal dark brown band on upper part of lateral lobes. Tegmina with comparatively narrow cell between longest oblique vein and *CuA*, light brownish with slightly darkened apical area. Hind wings very long. Fore tibiae strongly inflated, with large tympana; femora light brown with darkened apical part and numerous narrow oblique brown stripes on external surface of hind femora; tibiae and tarsi brown, but hind tarsi very slightly lighter. Thorax beneath and abdomen light brown; cerci yellowish in proximal and brownish in distal halves. Genitalia as in *I. vietnamensis*, but median lobes of proximal edge of epiphallus smaller, upper lobe of ectoparameres strongly projected, and apical narrow part of ectoparameres slightly shorter.

Variations. Coloration from slightly lighter than in holotype to noticeably darker. There is slight variability in shape of genital sclerites (Figs 79, 84 and 80, 83).

Female. Similar to male, but pronotum rather weakly narrowing in front. Tegmina



Figs 57-69. *Itara (Itara)*, ♂. 57, 58, *I. sericea* Walk.; 59, 60, *I. abdita* Gor. (59, holotype); 61, *I. communis* sp. n. (Son La); 62, 63, *I. vietnamensis* Gor. (62, Vinh Phu; 63, holotype); 64, 65, *I. aperta* Gor. (holotype); 66, *I. korotyaevi* sp. n.; 67, *I. kirejtshuki* sp. n. (Perak); 68, *I. distincta* sp. n.; 69, *I. minor* Chop. (Chiang Mai). Oblique veins (57, 59, 61, 62, 64) and dorsal part of tegmen (58, 60, 63, 65-69).

uniformly brown or light brown. Ovipositor very long. Practically indistinguishable from small females of *I. (I.) vietnamensis*.

Length. Body: ♂ 14-19 mm, ♀ 12-16 mm; body with wings: ♂ 23-26 mm, ♀ 22-25 mm; pronotum: ♂ 2.1-2.5 mm, ♀ 2-2.5 mm; tegmina: ♂ 14.5-17 mm, ♀ 13.5-16.5 mm; hind femora: ♂ 8.9-10.5 mm, ♀ 9-10 mm; ovipositor 11-12.5 mm.

Note. The specimens from Vietnam were mentioned recently as *I. minor* (Gorochoy, 1996: Figs 8, 26-28).

***Itara (Itara) aperta* Gorochoy, 1996**

(Figs 64, 65, 93-97)

Holotype. ♂, Vietnam, prov. Son La, environs of Song Ma, 400-600 m, 3-14.V.1986, A.V. Gorochoy (ZIAS).

Material. Vietnam: 5 ♂, 3 ♀ (paratypes), same data as holotype (ZIAS); 2 ♂, 2 ♀ (paratypes), prov. Son La, town Son La, at light, 1-2.V.1986, A.V. Gorochoy (ZIAS); 1 ♂ (paratype), prov. Son La, environs of Moc Chau, 400 m, 17.V.1986, A.V. Gorochoy (ZIAS); 4 ♂, 1 ♀ (paratypes), prov. Bacthai, distr. Phu Luong, Quang Chu, 300 m, 15-23.IV.1986, A.V. Gorochoy (ZIAS). Thailand: 1 ♂, "Ban Tham Tub Tao Fang, Chiang Mai. May 24, 1970. A. Samruad-Kit. Lot. 3427" (DEZB).

Note. The description of the type material has been published recently (Gorochoy, 1996: Figs 10, 32-34). The specimen from Thailand is similar to Vietnamese ones, but distinctly lighter (light brownish with slight darkening between ocelli and brown upper half of lateral lobes of pronotum) and with small distinctions in the shape of the proximal part of epiphallus (Figs 94, 97).

***Itara (Itara) korotyaevi* sp. n.**

(Figs 66, 98-101)

Holotype. ♂, Vietnam, prov. Gia Lai, 40 km N Kannack, Tram Lap, 20-24.IV.1995, A.V. Gorochoy (ZIAS).

Paratypes. Vietnam: 1 ♀, 1 old nymph (♂), same data as holotype, but nymph collected 1-14.XII.1988 (ZIAS); 1 ♀, prov. Gia Lai, 50-60 km N Kannack, Kon Cha Rang, 1000-1200 m, 17.IV.1995, A.V. Gorochoy (ZIAS).

Description. Male (holotype). Head medium-sized (as in previous species of this subgenus); rostrum between antennal cavities approximately as wide as antennal cavities; coloration of head light brownish with dark brown spot between ocelli which gradually merges into longitudinal slightly darkened band (from this spot to occiput), with 2 pairs of narrower longitudinal darkened bands between eyes and occiput, with

pair of small brown spots on apex of rostrum, and with brown spot on upper part of mandibles. Pronotum noticeably narrowing in front, brown with pair of transverse lighter spots on disc and light brownish lower half of lateral lobes. Tegmina narrow, with rather small mirror and very long apical area, with oblique veins almost as in all previous species except *I. (I.) vietnamensis*; their coloration brownish grey with lighter semi-transparent lateral area and darker (from brown to dark brown) apical area. Hind wings very long. Fore tibiae moderately inflated, with large tympana; legs almost uniformly light brown, with sparse indistinct small darkenings. Thorax beneath and abdomen light brownish; cerci almost yellowish. Genitalia with characteristic shape of epiphallus: lateral parts of proximal edge oblique, almost without S-shaped bend (Fig. 99), apex of medial process without deep notch (Fig. 100) and not denticulated beneath (Fig. 98); ectoparameres with slightly projected upper lobe before thin apical part (Figs 98, 101).

Old nymph. Similar to holotype, but smaller and slightly more spotted. Almost developed imaginal genitalia were found under nymphal genital integument.

Female. Similar to male, but pronotum slightly narrowing in front. Tegmina with dorsal part almost uniformly brownish grey. Ovipositor very long.

Length. Body: ♂ 19.5 mm, ♀ 17-18 mm; body with wings: ♂ 29 mm, ♀ 28-30 mm; pronotum: ♂ 2.5 mm, ♀ 2.5-2.7 mm; tegmina: ♂ 18.5 mm, ♀ 17.5-18.5 mm; hind femora: ♂ 11 mm, ♀ 11-12 mm; ovipositor 12.5-13 mm.

Etymology. The species is named in honour of the Russian entomologist Dr. B.A. Korotyayev.

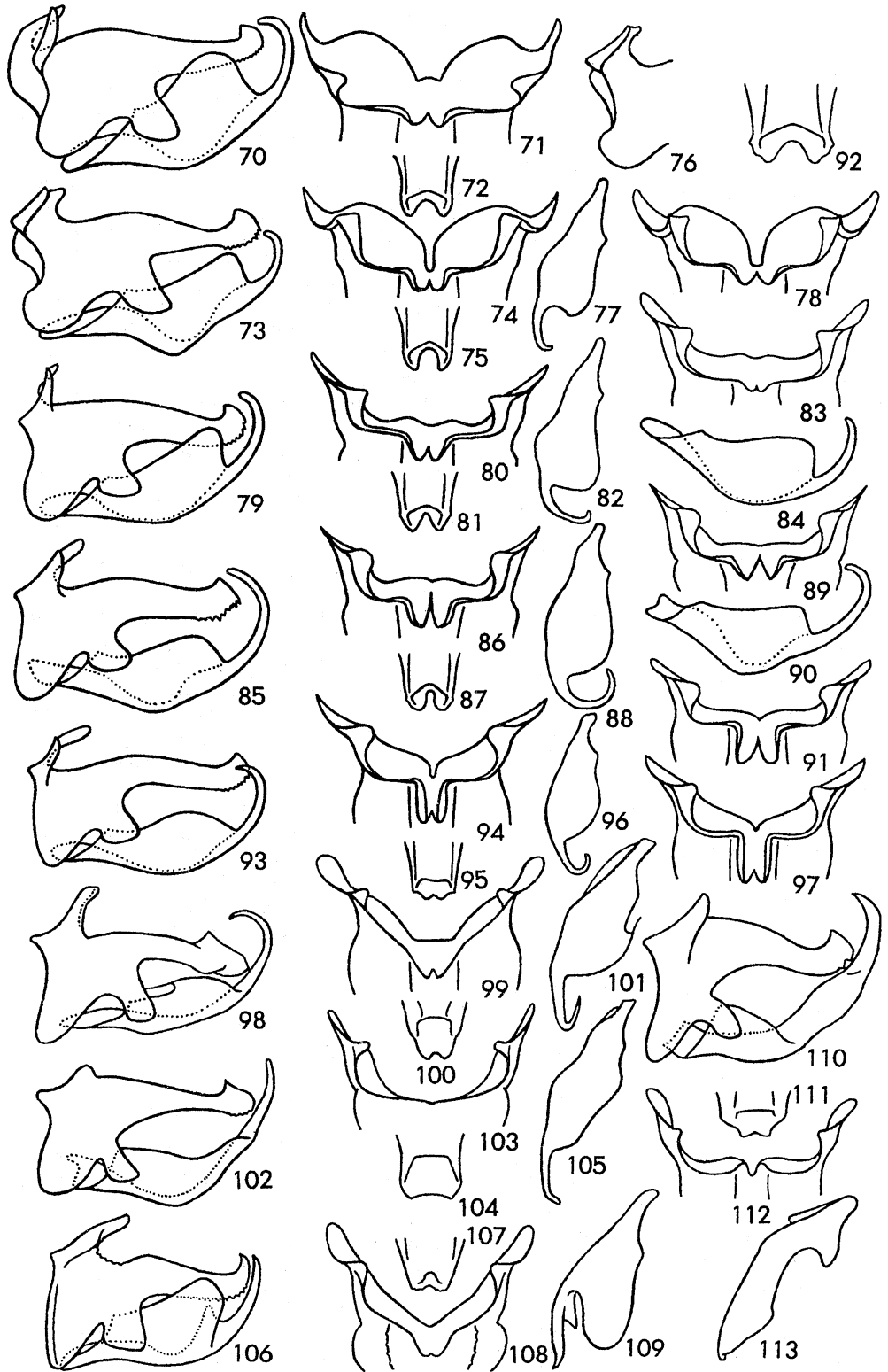
***Itara (Itara) kirejtshuki* sp. n.**

(Figs 67, 102-105)

Holotype. ♂, Malacca, "Malaysia: Hulu, Perak. Belum Expedition, B. Camp. 5° 30' 07" N, 101° 26' 21" E. IV-VI.1994. Leg. Rothamsted. Light Trap" (ZIAS).

Paratypes. Malacca: 12 ♂, 30 ♀, same data as holotype, but VIII.1993-VI.1994 (Leg. Rothamsted, I. Sivec) (ZIAS); 1 ♂, "Malaya. Bukit Kutu. 25.3.1934. N.C.E. Miller. Pres. by Com. Inst. Ent. B.M. 1953-680" (BMNH); 1 ♂, "Malaysia. Ulu Gombak Field Study Center (20 km NW Kuala Lumpur) und Umgebung. 8-28.3.1981. 11.III.1981. Heller leg." (FNSF).

Description. Male (holotype). Head rather small; rostrum between antennal cavities as wide as antennal cavities; coloration of head



light (yellowish) with almost triangular large brown spot between medial ocellus and occiput (there are rather wide light bands between this spot, eyes, and antennal cavities) and with small brown spot behind eyes; palpi and proximal part of antennae light brownish; other parts of antennae darker (brown). Pronotum very strongly narrowing in front; disc yellowish with several brown spots on central part; lateral lobes with wide brown upper part and rather narrow light brownish lower part. Tegmina wide, with strongly transverse mirror and not very long apical area, with oblique veins almost as in *I. (I.) korotyaevi*; coloration of tegmina light brown with semi-transparent stridulatory and lateral areas, with yellowish spots on basal part of dorsal area and near stridulatory vein. Hind wings very long. Fore tibiae strongly inflated, with large tympana; fore and middle femora light brownish with sparse brown spots; hind femora light brownish with darkened apical part and numerous narrow oblique brown stripes on external and upper surfaces; tibiae, fore and middle tarsi slightly darkened; hind tarsi light brown with darkish distal part of first segment. Thorax beneath, abdomen, and cerci almost yellowish. Genitalia as in Figs 102-105, with characteristic shape of proximal and apical parts of epiphallus, with very slightly projected upper lobe of ectoparameres before thin apical part (upper edge of this lobe slightly concave).

Variations. Pronotum sometimes darker; disc almost brown with interrupted light lateral longitudinal bands, lateral lobes brown with small light spot at fore lower corner. Head of specimen from BMNH light with only small darkened spot between ocelli.

Female. Similar to male, but shape of pronotum as in females of previous species of this subgenus. Tegmina uniformly greyish brown. Ovipositor very long.

Length. Body: ♂ 15-17 mm, ♀ 12-15 mm; body with wings: ♂ 24-26 mm, ♀ 23-25 mm; pronotum: ♂ 2.3-2.5 mm, ♀ 2.2-2.5 mm; tegmina: ♂ 17.5-19 mm, ♀ 15-16.5 mm; hind

femora: ♂ 9.8-10.5 mm, ♀ 9.6-10.8 mm; ovipositor 10.5-12 mm.

Etymology. The species is named in honour of the Russian entomologist Dr. A.G. Kirejtshuk.

Note. The specimen from BMNH was determined by Chopard as "*I. microcephala*" and the specimen from FNSF by Heller as "*I. minor*". Information about the song of latter specimen was published by Heller (1985).

***Itara (Itara) minor* Chopard, 1925**
(Figs 69, 106-109)

Material. Thailand: 1 ♂, "Dong Tark Ten (5000 ft.). Chiang Mai. Apr. 12-23, 1971. A. Samruadkit. Lot. 3473" (DEZB); 2 ♂, "Thailand. May 27, 1983", "3992" (DEZB and ZIAS); 1 ♂, Doi Muk, Chom, "May 30, 1983", "3984" (DEZB).

Description. Male. Very similar to *I. (I.) communis*. Rostrum between antennal cavities 1.3 times as wide as antennal cavities; coloration of head as in *I. (I.) communis*, but antennae more uniformly brownish. Pronotum as in *I. (I.) communis*. Dorsal area of tegmina as in Fig. 69; coloration of tegmina uniformly brownish (sometimes apical area slightly darker). Hind wings very long. Legs, thorax beneath, and abdomen as in *I. (I.) communis*, but cerci uniformly light brown. Shape of base and apex of epiphallus as in Figs 107, 108; proximal part of epiphallus with slightly denticulated paired upper keels (Figs 106, 108); ectoparameres with very strongly projected upper lobe and large inner acute tooth near base of apical part (Figs 106, 109).

Female unknown to me.

Length. Body 17-18 mm; body with wings 25-27 mm; pronotum 2.1-2.2 mm; tegmina 15.5-16.5 mm; hind femora 9-9.3 mm.

Note. The specimens mentioned by Gorochov (1996) as "*I. minor*" really are representatives of *I. (I.) communis*. The drawing (Chopard, 1925: Fig. 38) of the male genitalia of the lectotype from Vietnam ["1 ♂, de Chapra, Tonkin (R. Vitalis de Salvaza, VI-1916)", here designated (MNHN)] is similar

Figs 70-113. *Itara (Itara)*, ♂. 70-72, *I. sericea* Walk.; 73-78, *I. abdita* Gor. (73-75, holotype); 79-84, *I. communis* sp. n. (79-82, holotype; 83, 84, Chiang Mai); 85-92, *I. vietnamensis* Gor. (85-88, holotype; 89, Hongkong; 90-92, Nakhon Nayok); 93-97, *I. aperta* Gor. (93-96, holotype; 97, Chiang Mai); 98-101, *I. korotyaevi* sp. n. (holotype); 102-105, *I. kirejtshuki* sp. n. (holotype); 106-109, *I. minor* Chop. (Chiang Mai); 110-113, *I. distincta* sp. n. Epiphallus and ectoparamere from side (70, 73, 79, 85, 93, 98, 102, 106, 110); proximal (71, 74, 78, 80, 83, 86, 89, 91, 94, 97, 99, 103, 108, 112) and distal (72, 75, 81, 87, 92, 95, 100, 104, 107, 111) parts of epiphallus from above; proximal part of epiphallus from side (76); ectoparamere from below and slightly from side (77, 82, 88, 96, 101, 105, 109, 113); ectoparamere from side (84, 90).

to the genitalia of above-mentioned males from Thailand.

***Itara (Itara) distincta* sp. n.**

(Figs 68, 110-113)

Holotype. ♂, **Sumatra**, "Soekaranda. Januar 1894. Dohrn. Ex coll. H. Dohrn" (DEIE).

Description. Male (holotype). Head rather small; rostrum between antennal cavities 1.15 times as wide as these cavities; coloration of head light brown with rather large brown spot between ocelli and slightly behind them (hind part of this spot connected with eyes by small, almost indistinct darkenings), with transverse darkened band on hind part of vertex along occiput (between darkish spots behind eyes), and with slight small darkenings on apex of rostrum and base of mandibles; palpi and antennae light brown. Pronotum strongly narrowing in front; disc with rather numerous medium-sized brown and light brown spots; lateral lobes with wide brown upper and narrow light brown lower parts. Tegmina uniformly light brown, with noticeable pubescence (also on stridulatory areas) and venation of dorsal area as in Fig. 68; hind wings very long. Fore tibiae strongly inflated, with large tympana; fore and middle femora light brown with darkened distal part; hind femora light brown with distinct darkening on internal surface before apex and numerous narrow oblique darkened stripes on external surface; tibiae, fore and middle tarsi darkened; hind tarsi slightly lighter. Thorax beneath and abdomen (including cerci) light brown. Genitalia as in Figs 110-113, distinguished from those of all other species of this subgenus in unusual shape of ectoparameres (with not very thin apical part).

Female unknown.

Length. Body 16 mm; body with wings 23 mm; pronotum 2.1 mm; tegmina 16 mm; hind femora 9.5 mm.

Note. This specimen was determined as "*Itara microcephalus*".

Subgenus *Noctitara* subgen. n.

Type species *Itara nocturna* Gorochov, 1988, Northern Vietnam.

Diagnosis. Male tegmina similar to those of subgenera *Phormincter* and *Itara* (Figs 114-117). Male genitalia (Figs 124-140) with rather small epiphallus and rather large spermatophore sac; epiphallus with 3 distal processes as in subgenus *Itara* (unpaired median

process large, but without denticulated lower edges of apical part) and with numerous distinct denticles along middle and distal parts of upper edge; ectoparameres without widening at proximal part and with more or less wide apical part very slightly protruding behind apex of epiphallus.

Included species: type species, *Itara sonabilis* Gorochov, 1996, *I. (N.) pacholatkoii* sp. n., and *I. (N.) thailandensis* sp. n.

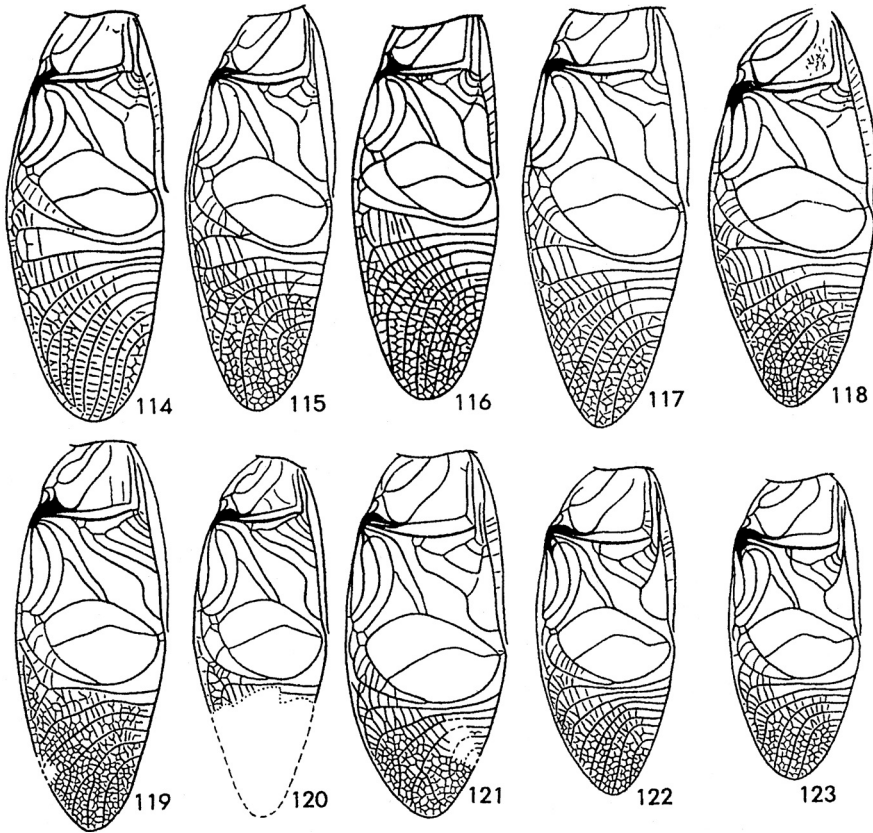
Key to species of the subgenus *Noctitara* for males

1. Apical projection of distal median process of epiphallus rather long and directed vertically (Figs 127, 131, 134); medial edge of ectoparameres with more or less large projection (Figs 126, 128, 130, 133) 2
- Apical projection of distal median process of epiphallus very short or directed slightly proximally (Figs 137, 140); medial edge of ectoparameres with very small projection or without it (Figs 136, 139) 3
2. Distal median process of epiphallus more or less long; additional projection between this process and distal lateral process of epiphallus absent (Figs 124, 125, 127, 129, 131); medial edge of ectoparameres with very large projection (Figs 126, 128, 130). General coloration more or less light brown. Southern Vietnam ***I. (N.) sonabilis* Gor.**
- Distal median process of epiphallus short; additional projection between this process and distal lateral process of epiphallus developed (Figs 132, 134); medial edge of ectoparameres with somewhat smaller projection (Fig. 133). General coloration more or less dark brown. Southern Vietnam ***I. (N.) pacholatkoii* sp. n.**
3. Apical projection of distal median process of epiphallus very short and directed vertically (Fig. 137); medial edge of ectoparameres with very small projection (Fig. 136); distal half of ectoparameres without strong widening (Figs 135-137). Tegmina with rather small mirror (Fig. 116). General coloration dark. Northern Vietnam ***I. (N.) nocturna* Gor.**
- Apical projection of distal median process of epiphallus longer and directed slightly proximally (Fig. 140); medial edge of ectoparameres without projection (Fig. 139); distal half of ectoparameres with strong widening (Figs 138-140). Mirror of tegmina larger (Fig. 117). General coloration light. Thailand ***I. (N.) thailandensis* sp. n.**

***Itara (Noctitara) sonabilis* Gorochov, 1996**
(Figs 114, 124-131)

Holotype. ♂, **Vietnam**, prov. Gia Lai, 20 km N Kannack, Buon Luoi, 3-11.XI.1993 (imago reared 20-27.II.1994), A.V. Gorochov (ZIAS).

Material. **Vietnam**, prov. Gia Lai: 15 ♂, 27 ♀, same data as holotype, but 22.III-30.IV.1995 (ZIAS); 3 ♂, 4 ♀, 40 km N Kannack, Tram Lap, 11-



Figs 114-123. *Itara*, ♂, dorsal part of tegmen. 114, *I. (Noctitara) sonabilis* Gor. (holotype); 115, *I. (N.) pacholatkoii* sp. n. (holotype); 116, *I. (N.) nocturna* Gor. (holotype); 117, *I. (N.) thailandensis* sp. n. (holotype); 118, *I. (Phorminctor) johani* sp. n.; 119, *I. (Singitara) nigra* sp. n.; 120, *I. (S.) singularis* sp. n.; 121, *I. (Bornitara) borneoensis* sp. n.; 122, *I. (B.) kalimantanensis* sp. n.; 123, *I. (B.) sabahensis* sp. n.

24.IV.1995, A.V. Gorochov (ZIAS); 3 ♂, 7 ♀, 50-60 km N Kannack, Kon Cha Rang, 1000-1100 m, 14-20.IV.1995, A.V. Gorochov (ZIAS).

Description. Female (nov.). Head medium-sized; rostrum between antennal cavities 1.3 times as wide as antennal cavities; upper half of head from brown (with dark brown area between ocelli, with light stripe along lateral side of rostrum and along fore half of upper edge of eye) to light brown (with pair of brown spots behind eyes, with wide longitudinal brown stripe between median ocellus and brown large spot on hind part of vertex); lower half of head light brown with brown spot or spots on external side of mandibles; palpi light brown with darkish apical part; antennae brown with lighter spots on scape. Pronotum rather slightly narrowing in front; disc brown with 2-4 light brown spots; lateral lobes brown or dark brown

with light brown lower half. Tegmina uniformly light brown. Hind wings very long. Fore tibiae slightly inflated, with large tympana; legs from almost uniformly light brown to light brown with brown tibiae, fore and middle tarsi, and apical part of femora. Thorax beneath and abdomen (including cerci) from yellowish to light brown. Ovipositor very long.

Male. Description of holotype has been published recently (Gorochov, 1996: Figs 4, 16-18). New material shows some variability in coloration (as in females), number of oblique veins (4-7), shape of mirror, size of apical area of tegmina, and structure of genitalia: distal median process of epiphallus from long (Figs 127, 129, 131) to short (Figs 124, 125), ectoparameres from thick (Figs 127, 128) to more or less thin (Figs 125, 126, 130, 131).

Length. Body: ♂ 17-21 mm, ♀ 14-18 mm; body with wings: ♂ 28-31 mm, ♀ 26-30 mm; pronotum: ♂ 2.5-2.8 mm, ♀ 2.4-2.8 mm; tegmina: ♂ 19-22 mm, ♀ 17-19 mm; hind femora: ♂ 10.5-11.5 mm, ♀ 10.5-12 mm; ovipositor 11-13 mm.

***Itara (Noctitara) pacholatko* sp. n.**
(Figs 115, 132-134)

Holotype. ♂, Vietnam, prov. Lam Dong, environs of Da Lat, "Dalat-Lang Bien. 1500 m, 17.4.1995. Leg. P. Pacholatko" (ZIAS).

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

Description. Male (holotype). Similar to *I. (N.) sonabilis*, but smaller and darker. Head dark brown with light brown labrum, rostrum under medial ocellus, and stripe along upper edge of antennal cavities; palpi light brown with darkish apical part; antennae dark brown with light brown base. Pronotum strongly narrowing in front, dark brown with somewhat lighter lower part of lateral lobe. Tegmina as in Fig. 115, light brownish with dark greyish brown apical area; stridulatory and lateral areas semi-transparent. Hind wings very long. Fore tibiae as in *I. (N.) sonabilis*; fore and middle legs dark brown with light brown proximal half of femora; hind femora light brown with dark brown apical part and 2 large brown spots on basal and middle parts of external and upper surfaces; hind tibiae and tarsi dark brown with light spines and spurs. Thorax beneath and abdomen light brown; cerci with yellowish proximal and brownish distal halves. Genitalia (Figs 132-134) differs from those of *I. (N.) sonabilis* in distinctly shorter distal median process of epiphallus, presence of additional small almost angulate lobe between distal median and distal (lower) lateral processes of epiphallus, smaller distal part of ectoparameres, and slightly smaller projection of medial edge of ectoparameres.

Variations. Paratypes additionally with light brown spot between lateral ocellus and eye, slightly darker palpi, and pair of lighter spots on disc of pronotum.

Female. Similar to male, but pronotum more weakly narrowing in front. Tegmina

greyish brown (rather dark) with short lighter stripe along proximal part of lateral edge of dorsal area and semi-transparent areas between dark branches of *Sc*. Ovipositor rather long.

Length. Body: ♂ 16-17 mm, ♀ 13-14 mm; body with wings: ♂ 25-27 mm, ♀ 25-26 mm; pronotum: ♂ 2.3-2.5 mm, ♀ 2.2-2.3 mm; tegmina: ♂ 18-19 mm, ♀ 16-17 mm; hind femora: ♂ 9-9.5 mm, ♀ 9.5-10 mm; ovipositor 9-9.5 mm.

***Itara (Noctitara) nocturna* Gorochov, 1988**
(Figs 116, 135-137)

Holotype. ♂, Vietnam, prov. Son La, environs of Song Ma, 400-600 m, 3-14.V.1986, A.V.Gorochov (ZIAS).

Material. Vietnam: 2 ♂, 4 ♀ (paratypes), same data as holotype (ZIAS).

Note. The description of the type material has been published recently (Gorochov, 1988: Figs 74-78). This species is rather similar to *I. (N.) pacholatko* in size and coloration, but lateral lobes of pronotum, lateral area of female tegmina, fore and middle femora without light areas, all spots of hind femora larger and dark brown, thorax beneath and abdomen brown (with cerci as in *I. (N.) pacholatko*). The mirror of the male tegmina smaller than in previous species of this subgenus (for comparison see Figs 114-116). The male genitalia are characterized by the short distal median process of epiphallus, distinctly smaller upper acute apical projection of this process, very small projection of medial edge of ectoparameres, and rather long distal part of ectoparameres (Figs 135-137).

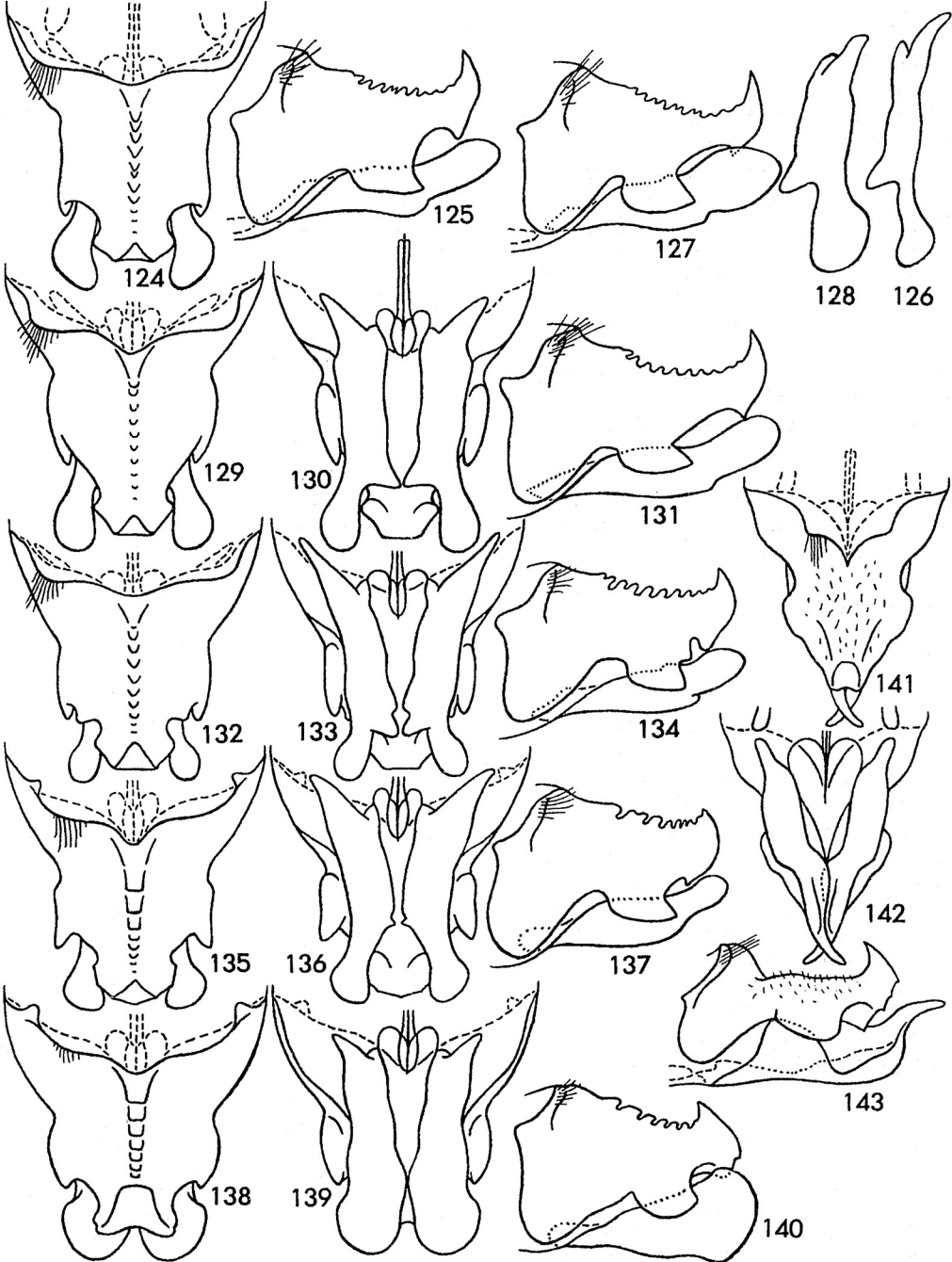
***Itara (Noctitara) thailandensis* sp. n.**
(Figs 117, 138-140)

Holotype. ♂, Thailand, Nakhon Nayok, Rok Yai, "2 Nov. 1988", "4123" (DEZB).

Paratypes. Thailand: 1 ♂, same data as holotype (ZIAS); 1 ♂, Nakhon Nayok, Krong Keu, "23 Feb. 1988", "4118" (DEZB).

Description. Male (holotype). Large, with rather large head. Rostrum between antennal cavities 1.3 times as wide as antennal cavities; coloration of head light brown with brown area between ocelli; this brown area

Figs 124-143. *Itara*, ♂. 124-131, *I. (Noctitara) sonabilis* Gor. (124-126, Kon Cha Rang, 127, 128, Tram Lap, 129-131, holotype); 132-134, *I. (N.) pacholatko* sp. n. (holotype); 135-137, *I. (N.) nocturna* Gor. (holotype); 138-140, *I. (N.) thailandensis* sp. n. (holotype); 141-143, *I. (Phormineter) johani* sp. n. Distal half of genitalia from above (124, 129, 132, 135, 138, 141), from side (125, 127, 131, 134, 137, 140, 143), and from below (130, 133, 136, 139, 142); ectoparamere from below (126, 128).



gradually merges into slight darkening at centre of vertex; palpi and antennae light brown. Pronotum strongly narrowing in front, light brown with very slightly darkened disc. Tegmina with 4 distinct oblique veins and comparatively large mirror, light brown with almost yellowish lateral area and semi-transparent stridulatory areas. Hind wings very long. Fore tibiae as in *I. (N.) sonabilis*; coloration of legs uniformly light brown. Thorax beneath and abdomen light brown; cerci very slightly darkened. Genitalia as in Figs 138-140; apical projection of distal median process of epiphallus directed vertically and slightly proximally; ectoparameres without distinct projection of medial edge and with strong widening of distal half.

Variations. Sometimes apical part of palpi darkish, pronotum with very slightly spotted disc, tegmina with 5 distinct oblique veins, and cerci very light.

Female unknown.

Length. Body 19-21 mm; body with wings 29-31 mm; pronotum 3-3.2 mm; tegmina 20-22 mm; hind femora 12-12.5 mm.

Subgenus *Singitara* subgen. n.

Type species *Itara (Singitara) singularis* sp. n., Singapore.

Diagnosis. Male tegmina with large and slightly transverse mirror; all oblique veins normal, but distal part of longest of them forming small cell (Figs 119, 120). Male genitalia with large epiphallus and small spermatophore sac; epiphallus with very large unpaired median distal part (with characteristic complicated upper apical part) and very small paired lateral distal (lower) processes; upper edge of epiphallus with numerous distinct denticles at proximal part only; ectoparameres without widening at proximal part and with rather wide apical part not extending to apex of epiphallus (Figs 144-148).

Included species: type species and *I. (S.) nigra* sp. n.

Key to species of the subgenus *Singitara* for males

1. Epiphallus with apical tooth-shaped projection directed vertically, with slightly oblique in profile hind (distal) edge (Fig. 146), and without small lateral angulate tubercles at lower half of distal part (Fig. 145: a). Tegmina with rather long cell formed by distal part of longest oblique vein (Fig. 120). Singapore *I. (S.) singularis* sp. n.
- Epiphallus with apical tooth-shaped projection directed almost proximally, with strongly oblique in profile hind (distal) edge (Fig. 148), and with

small lateral angulate tubercles at lower half of distal part (Fig. 147: a). Tegmina with shorter cell formed by distal part of longest oblique vein (Fig. 119). Kalimantan *I. (S.) nigra* sp. n.

Itara (Singitara) singularis sp. n. (Figs 120, 144-146)

Holotype. ♂, Singapore, "Sing." (ZIAS).

Description. Male (holotype). Medium-sized; head rather small. Rostrum between antennal cavities 1.2 times as wide as antennal cavities; head uniformly dark brown; palpi and scape dark brown; flagellum of antennae from brown at base to light brown distally. Pronotum strongly narrowing in front, uniformly dark brown. Tegmina light brown with darkish apical area, with semi-transparent stridulatory areas and lower half of lateral area; stridulatory apparatus with oval mirror and 6 distinct oblique veins; distal part of longest oblique vein forming rather long cell. Hind wings very long. Fore tibiae distinctly inflated, with large tympana; fore and middle legs dark brown; hind legs brown with slightly lighter tarsi and spurs of tibiae. Thorax beneath and abdomen brown; cerci brown with lighter base. Genitalia as in Figs 144-146; apical tooth-shaped projection of epiphallus directed vertically; hind (distal) edge of epiphallus slightly oblique in profile; lower half of distal part of epiphallus without small lateral angulate tubercles (Fig. 145: a).

Female unknown.

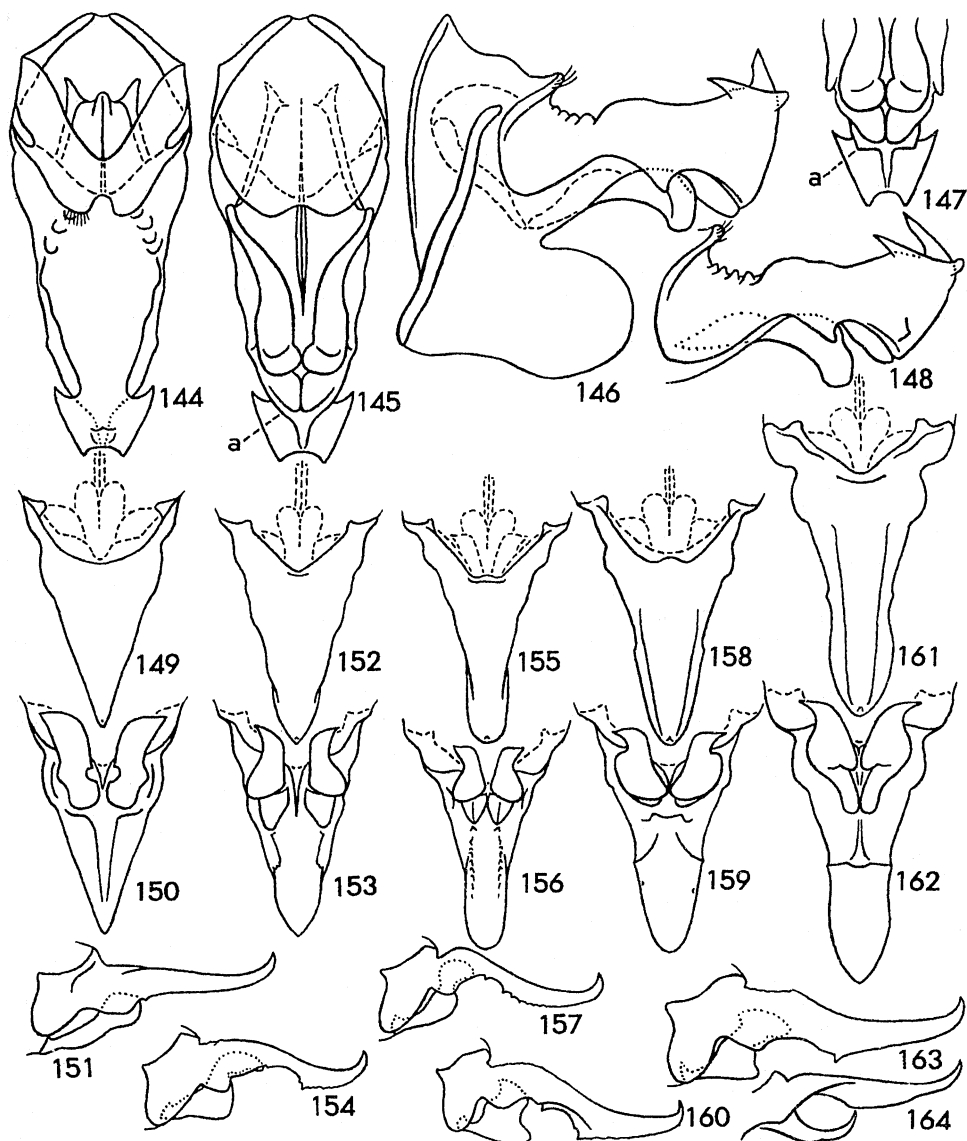
Length. Body 15.5 mm; body with wings 24 mm; pronotum 2.1 mm; hind femora 8.7 mm (apical part of tegmina torn off).

Itara (Singitara) nigra sp. n. (Figs 119, 147, 148)

Holotype. ♂, Kalimantan, "Borneo: Api, 3000 ft. Limestone forest, iv.1978. J.D. Holloway. B.M. 1984-114" (BMNH).

Paratypes. Kalimantan: 2 ♀, same data as holotype (BMNH and ZIAS); 2 ♀, "Sarawak: Gunong Mulu Nat. Park. R.G.S. Exped. 1977-8. J.D. Holloway et al. B.M. 1978-206. Site 23. April. W. Melinau Gorge. 250 m. 430558. FEG 4. Limestone forest MV - canopy-understorey" (BMNH and ZIAS).

Description. Male (holotype). Very similar to *I. (S.) singularis*, but size of body and especially head larger, coloration of head, pronotum, and fore legs almost black (middle and hind legs missing), tegmina with 7 distinct oblique veins and rather short cell formed by distal part of longest oblique vein, genitalia with apical tooth-shaped projection of epiphallus directed almost proxi-



Figs 144-164. *Itara*, ♂. 144-146, *I. (Singitara) singularis* sp. n.; 147, 148, *I. (S.) nigra* sp. n.; 149-151, *I. (Bornitara) borneoensis* sp. n.; 152-154, *I. (B.) sarawakensis* sp. n. (holotype); 155-157, *I. (B.) kalimantanensis* sp. n.; 158-160, *I. (B.) sabahensis* sp. n.; 161-163, *I. (B.) latipennis* Chop.; 164, *I. (B.) chopardi* sp. n. (Chopard, 1930: Fig. 51). Genitalia from above (144), from below (145), and from side (146); distal part of genitalia from below (147) and from side (148); epiphallus and ectoparameres from side (148, 151, 154, 157, 160, 163), from above (149, 152, 155, 158, 161), and from below (150, 153, 156, 159, 162).

mally, with strongly oblique hind (distal) edge of epiphallus in profile (Fig. 148), and with pair of small lateral angulate tubercles at lower half of distal part of epiphallus (Fig. 147: a).

Female. Similar to male, but pronotum more weakly narrowing in front, coloration

of head, pronotum, and all legs from dark brown to black, coloration of tegmina, other parts of thorax, and abdomen from brown to dark brown (but tegmina with light brown stripe along proximal half of lateral edge of dorsal area). Ovipositor rather short. Females from "Gunong Mulu Nat. Park"

distinctly smaller than specimens from "Api".

Length. Body: ♂ 17.5 mm, ♀ 14-15 mm; body with wings: ♂ 27 mm, ♀ 23-26 mm; pronotum: ♂ 2.4 mm, ♀ 2-2.3 mm; tegmina: ♂ 19 mm, ♀ 14.5-17.5 mm; hind femora ♀ 8.5-9.5 mm; ovipositor 6.2-7.3 mm.

Subgenus *Micritara* subgen. n.

Type species *Itara minuta* Chopard, 1940, Kalimantan.

Diagnosis. Male tegmina with large, distinctly transverse mirror; all oblique veins normal, but distal part of longest of them forming large cell (Fig. 6). Male genitalia with rather small epiphallus and rather large spermatophore sac; epiphallus with paired distal lateral processes intermediate between those of subgenus *Itara* and rounded lobe-like lower lateral edges of middle part of epiphallus of *Phormincter*; lower edges of apical part of epiphallus denticulate; upper edge of epiphallus without numerous distinct denticles; ectoparameres similar to those of *Noctitara* (Figs 16-18).

Included species: type species and possibly *Itara denticulata* Chopard, 1940, both from Kalimantan.

Itara (Micritara) minuta Chopard, 1940 (Figs 6, 16-18)

Lectotype (designated here). ♂, **Kalimantan**, "Sarawak: R. Kapah, trib. of R. Tinjar. 23.IX.1932. In very shady primitive forest, in humus layer. Oxford Univ. Exp. B.M. Hobby & A.M. Moore. B.M. 1933-254. NY 355" (BMNH).

Material. **Kalimantan:** 1 ♀ (paralectotype), "Sarawak: Foot of Mt. Dulit. Junction of rivers Tinjar & Lejok. 19.VIII.1932. Old secondary forest. 10. F.T. Light trap. 88 H" (BMNH); 2 ♂, 4 ♀, "Sarawak: Gunong Mulu Nat. Park. R.G.S. Exped. 1977-8. J.D. Holloway et al. B.M. 1978-206" (BMNH and ZIAS); 1 ♀, "Sabah: 200 ft, R. Karamuak, 7 m SSE. Telupid. 1-7.ix.1977" (BMNH).

Description. Male (lectotype). Size small. Rostrum between antennal cavities 1.1 times as wide as antennal cavities; head light brown with brown area between ocelli and slight small darkenings on hind part of vertex; palpi light brown; antennae brown with light brown scape. Pronotum moderately narrowing in front, light brown with dark brown upper 3/4 of lateral lobe and several light darkenings on disc. Tegmina as in Fig. 6, with 5 oblique veins and strongly transverse mirror; coloration of tegmina light brown with brown apical and lateral areas

(basal part of dorsal area also with darkened spot); stridulatory areas semi-transparent. Hind wings very long. Fore tibiae moderately inflated, with large tympana; femora light brown with darkened transverse band near apex and numerous oblique narrow darkish stripes on external surface of hind femora; tibiae slightly darkened with lighter hind tarsi, spines and spurs of hind tibiae. Thorax beneath and abdomen light brown with slightly darkened abdominal tergites and genital plate; cerci light. Genitalia as in Figs 16-18.

Variations. Males from the new material slightly darker (almost entire upper part of head brown; lateral lobe of pronotum dark brown with only small fore lower spot light; apical area and lower half of lateral area of tegmina also dark brown).

Female. Similar to male, but pronotum very slightly narrowing in front, tegmina uniformly light brown to brown. Genital plate rather short, almost not narrowed at apex, and slightly notched. Ovipositor rather short.

Length. Body: ♂ 12-14 mm, ♀ 10-12 mm; body with wings: ♂ 18-19 mm, ♀ 16-18 mm; pronotum: ♂ 1.8-2 mm, ♀ 1.7-1.9 mm; tegmina: ♂ 10.5-12 mm, ♀ 10-11.5 mm; hind femora: ♂ 7.5-8 mm, ♀ 7-8 mm; ovipositor 6-6.8 mm.

Note. This species has been briefly described from 3 syntypes. One of them (male) is here designated as lectotype; 2 females (paralectotypes) are representatives of two different species: *I. (M.) minuta* and unknown one. The original description (Chopard, 1940: Figs 23, 24) was provided with remarks: "the female only of this species was described from Bettotan, Borneo" and "the full description will appear later in Treubia". But the mentioned paper has not been published and the female from Bettotan cannot be regarded as holotype of this species.

Itara (Micritara ?) denticulata Chopard, 1940

Syntype. ♀, **Kalimantan**, "Sarawak: Foot of Mt. Dulit. Junction of rivers Tinjar & Lejok. 4.IX.1932. Old secondary forest. Traps 2. Oxford Univ. Exp. B.M. Hobby & A.W. Moore. B.M. 1933-254. H 197" (BMNH).

Note. The very short description of only this female (Chopard, 1940) is provided with remarks analogous to the above-mentioned ones. The material from Mt. Kinabalu has not been described, but Chopard wrote that "in the male, the genitalia are strongly denticulated beneath". The syntype female is

similar to *I. (M.) minuta* (especially in size of body and length of ovipositor), but distinguished by the coloration of pronotum (brownish with somewhat lighter lateral lobes) and legs (uniformly light brown), shape of genital plate of female (rather long, strongly notched, and narrowed at apex), and possibly denticulation of male genitalia (see above). Unfortunately, the latter character is insufficient for determination of subgeneric position.

Subgenus **Bornitara** subgen. n.

Type species *Itara (Bornitara) sarawakensis* sp. n., Kalimantan.

Diagnosis. Male tegmina with large and more or less transverse mirror; oblique veins (except longest one) with zigzag distal part or without apical part; longest oblique vein forming large cell (Figs 121-123). Male genitalia with rather long epiphallus and comparatively large spermatophore sac; epiphallus without paired distal lateral processes, but with rounded lobe-like lower lateral edges at middle part and usually denticulated lower edges of distal part; upper edge of epiphallus without numerous distinct denticles; ectoparameres various, but not extending to apex of epiphallus (Figs 149-164).

Included species (all from Kalimantan): type species, *Itara latipennis* Chopard, 1930, *I. (B.) borneoensis* sp. n., *I. (B.) kalimantanensis* sp. n., *I. (B.) sabahensis* sp. n., and possibly *I. (B. ?) chopardi* sp. n.

Key to species of the subgenus *Bornitara* for males

1. Distal upper process of ectoparameres not longer than distal lower process or absent (Figs 151, 160, 164) 2
- Distal upper process of ectoparameres longer than distal lower process (Figs 154, 157, 163) 4
2. Ectoparameres with short rounded distal part not divided into upper and lower processes (Figs 150, 151). Oblique veins of tegmina (except longest one) with zigzag distal part (Fig. 121) **I. (B.) borneoensis** sp. n.
- Distal part of ectoparameres rather long and acute (Fig. 164) or divided into upper and lower processes (Fig. 160). Oblique veins of tegmina (except longest one) without apical part (Fig. 123) 3
3. Epiphallus with noticeable teeth beneath; ectoparameres rather short and with not acute apex (Figs 159, 160) **I. (B.) sabahensis** sp. n.
- Epiphallus without noticeable teeth beneath; ectoparameres rather long and with acute apex (Fig. 164) **I. (B. ?) chopardi** sp. n.
4. Epiphallus with only one pair of rather large teeth beneath; ectoparameres from below with

- rather narrow distal upper part (Figs 162, 163) **I. (B.) latipennis** Chop.
- Epiphallus with several pairs of small teeth beneath; ectoparameres from below with more or less wide distal upper part (Figs 153, 154, 156, 157) 5
- 5. Apical part of epiphallus wider and acute (Figs 152, 153); upper surface of epiphallus in profile sloping at middle part (Fig. 154) **I. (B.) sarawakensis** sp. n.
- Apical part of epiphallus narrower and rounded (Figs 155, 156); upper surface of epiphallus in profile rather strongly curved at middle part (Fig. 157) **I. (B.) kalimantanensis** sp. n.

Itara (Bornitara) borneoensis sp. n.

(Figs 121, 149-151)

Holotype. ♂, Kalimantan, "N. Borneo: Mt. Kinabalu. Mesilau Camp. 20-27.iii.1964. 5,000. Royal. Soc. Exped. coll. S. Kueh. B.M. 1964-250" (BMNH).

Description. Male (holotype). Head rather small; rostrum between antennal cavities 1.3 times as wide as antennal cavities; coloration of head almost uniformly brown (lower part of head indistinctly lighter than upper part); palpi and antennae brownish with darkened distal part. Pronotum strongly narrowing in front, uniformly brown. Tegmina as in Fig. 121, with 4 oblique veins which (except longest one) with zigzag distal part; apical area comparatively large; coloration of tegmina uniformly light brown with semi-transparent stridulatory areas and areas between branches of Sc. Hind wings long (f. macroptera). Fore tibiae moderately inflated, with large tympana; thorax beneath, legs, abdomen, and cerci almost uniformly light brown. Genitalia with rather straight epiphallus almost non-denticulated beneath; ectoparameres short and with rounded distal part not divided into upper and lower processes (Figs 149-151).

Female unknown.

Length. Body 14.5 mm; body with wings 23 mm; pronotum 2.4 mm; tegmina 17.8 mm; hind femora 9.6 mm.

Note. This specimen was determined by Tinning as "? *Itara microcephala*".

Itara (Bornitara) sarawakensis sp. n.

(Figs 152-154)

Holotype. ♂, Kalimantan, "Sarawak: Gunong Mulu Nat. Park. R.G.S. Exped. 1977-8. J.D. Holloway et al. B.M. 1978-206. Site 20. Mar.-Apr. W. Melinau Gorge. 150 m. 422577. Fig 3. Kerangas. MV-understorey" (BMNH).

Paratypes. Kalimantan: 1 ♂, same data as holotype (ZIAS); 3 ♀, same data as holotype, but "Site 24. April...270 m. 430558. Feg 4. Limestone forest. Acl-understorey" (BMNH and ZIAS).

Description. Male (holotype). Similar to *I. (B.) borneoensis*, but rostrum between antennal cavities 1.2 times as wide as antennal cavities, pronotum slightly lighter, apical parts of oblique veins (except longest one) reduced (similar to those in Figs 122, 123), apical area of tegmina slightly darkish (almost brown), apical part of hind femora darkened, epiphallus slightly curved in profile and denticulated beneath, ectoparameres with rather long upper process, distinctly longer than lower one and more or less wide from below (Figs 152-154).

Variations. Tegmina with 4-5 oblique veins. Epiphallus somewhat more slightly denticulated beneath.

Female. Similar to male, but upper part of head darker (almost dark brown), pronotum distinctly less narrowing in front and with slightly lighter lateral lobes, tegmina from light brown to brown, external surface of hind femora sometimes with more or less distinct numerous narrow oblique darkish stripes, and tergites of abdomen with darkenings. Ovipositor very long.

Length. Body: ♂ 15-16 mm, ♀ 14-15 mm; body with wings: ♂ 23-24 mm, ♀ 24-26 mm; pronotum: ♂ 2.5-2.7 mm, ♀ 2.6-2.8 mm; tegmina: ♂ 15.5-16 mm, ♀ 16-17 mm; hind femora: ♂ 9-9.5 mm, ♀ 9.5-10.5 mm; ovipositor 10.5-11.5 mm.

***Itara (Bornitara) kalimantanensis* sp. n.**
(Figs 122, 155-157)

Holotype. ♂, **Kalimantan**, "Sarawak, East Malaysia. 4th Division, Baram District. Gunong Mulu National Park. 4° 03' N/114° 56' E. 11-18.vi.1978. N.M. Collins coll. No.: (B.M./1978/1). Alluvial Forest" (BMNH).

Description. Male (holotype). Very similar to *I. (B.) sarawakensis*, but tegmina with 6 oblique veins (Fig. 122), epiphallus with narrow distal part rounded (not acute) at apex from above (Fig. 155) and with rather strongly curved middle part of upper surface in profile (Fig. 157), ectoparameres slightly smaller and with lower process somewhat less protruding.

Female unknown.

Length. Body 13.7 mm; body with wings 22.5 mm; pronotum 2.4 mm; tegmina 16 mm; hind femora 9.4 mm.

***Itara (Bornitara) sabahensis* sp. n.**
(Figs 123, 158-160)

Holotype. ♂, **Kalimantan**, "Sabah: Sandakan district, Rumidi estate, River Labuk. 50-150 ft. 14-31.ix.1973. C.J.M. Pruett. B.M. 1974-277. Heavy forest near plantations" (BMNH).

Description. Male (holotype). Head medium-sized; rostrum between antennal cavities 1.3 times as wide as antennal cavities; coloration of head, palpi, and base of antennae (other part of antennae lost) as in *I. (B.) borneoensis*. Pronotum as in *I. (B.) sarawakensis*. Tegmina (Fig. 123) similar to those of *I. (B.) sarawakensis* and *I. (B.) kalimantanensis*, but apical area somewhat smaller. Hind wings very long. Thorax beneath, legs, abdomen, and cerci as in *I. (B.) sarawakensis*. Genitalia (Figs 158-160) with rather numerous noticeable teeth at lower part of epiphallus; ectoparameres with upper distal process not longer than their lower distal process.

Female unknown.

Length. Body 15 mm; body with wings 21.5 mm; pronotum 2.5 mm; tegmina 14.5 mm; hind femora 9 mm.

***Itara (Bornitara) latipennis* Chopard, 1930**
(Figs 161-163)

Material. **Kalimantan, Sarawak:** 2 ♂, "Mt. Dulit. 24.x-17.xi.1932. Primitive forest. Oxford Univ. Exp. B.M.Hobby & A.W. Moore. B.M. 1933-254" (BMNH and ZIAS); 2 ♂, "Gunong Mulu Nat. Park. R.G.S. Exped. 1977-8. J.D.Holloway et al. B.M. 1978-206. Site 19. March. W. Melinau Gorge. 100 m. 427567. Alluvial forest. Acl-understorey" (BMNH and ZIAS); 1 ♂, 1 ♀, "Gunong Mulu Nat. Park. R.G.S. Exped. 1977-8. J.D. Holloway et al. B.M. 1978-206. Site 7. January. Long Pala (Base). 50 m. 324450. Alluvial/secondary forest. Acl-understorey" (BMNH and ZIAS).

Description. Male. Head rather small; rostrum between antennal cavities 1.2 times as wide as antennal cavities; coloration of head, palpi, and antennae as in *I. (B.) borneoensis*. Pronotum as in *I. (B.) borneoensis*. Tegmina with 5 oblique veins similar to those of *I. (B.) sarawakensis*, *I. (B.) kalimantanensis*, and *I. (B.) sabahensis*; apical area from rather large to comparatively small; coloration of tegmina as in *I. (B.) sarawakensis*. Hind wings very long. Thorax beneath, legs, abdomen, and cerci as in *I. (B.) borneoensis* (sometimes apical part of hind femora slightly darkened). Genitalia with only a pair of rather large teeth at lower part of long epiphallus (Figs 161, 163); upper distal proc-

ess of ectoparameres long and narrow from below (Fig. 162).

Female. Similar to *I. (B.) sarawakensis*, but pronotum darker (with almost dark brown disc and upper half of lateral lobes), tegmina brownish grey, and hind femora uniformly brownish.

Length. Body: ♂ 14-16 mm, ♀ 15 mm; body with wings: ♂ 22-26 mm, ♀ 25 mm; pronotum: ♂ 2.3-2.6 mm, ♀ 2.7 mm; tegmina: ♂ 15.5-18 mm, ♀ 16 mm; hind femora: ♂ 8.5-9 mm, ♀ 10 mm; ovipositor 11 mm.

Note. 2 males from Mt. Dulit were determined as "*I. latipennis*" by Chopard.

Itara (Bornitara ?) chopardi sp. n.

(Fig. 164)

Holotype. ♂, **Kalimantan**, Sarawak, "Mt. Murud" (Chopard, 1930: p. 42)(SMKM).

Description. Male (holotype). Similar to *I. (B.) latipennis* (Chopard, 1930: p. 29), but clearly distinguished in peculiarities of male genitalia: epiphallus without noticeable denticles at lower edges, distal half of ectoparameres comparatively long, narrow and strongly curved upwards in profile, apex of ectoparameres acute (Fig. 164) (the new species clearly differs in the mentioned peculiarities of ectoparameres from all other species of this subgenus).

Female unknown.

Note. This specimen is one of the paratypes of *I. (B.) latipennis*. Its male genitalia look intermediate between those of the subgenera *Bornitara* and *Gryllitara* (ectoparameres are more or less similar to those of *I. (G.) diligens*; for comparison see Figs 15, 164).

Genus *Parapentacentrus* Shiraki, 1930

Type species *Parapentacentrus formosanus* Shiraki, 1930, Taiwan.

= *Pseuditara* Chopard, 1969 (Gorochov, 1985). Type species *Pseuditara lineaticeps* Chopard, 1969, Burma.

Diagnosis. Head slightly flattened dorsoventrally; hypopharyngeal proboscis absent (Fig. 177). Male tegmina without stridulatory apparatus, indistinguishable from those of female. Metanotal gland as in Figs 169, 181. Fore tibiae inflated, with open both (outer and inner) tympana, but inner tympanum clearly larger and slightly immersed (Fig. 176). Male anal plate with pair of characteristic processes (Fig. 168). Male genitalia rather uniform (Figs 165-167, 179, 180).

Included species: both type species and *Parapentacentrus fuscus* Gorochov, 1988.

Key to species of *Parapentacentrus* for females

1. Ovipositor distinctly longer than hind femora. General coloration rather light brown, more or less similar to that in Figs 170-175. Taiwan *P. formosanus* Shir.
- Ovipositor distinctly shorter than hind femora. Coloration various 2
2. General coloration rather light brown; lower part of head light brown or only partly brown (Figs 170, 171), most of femora light brown (darkened areas of femora from brownish to brown) (Figs 172-175). Northern Burma, Northern Vietnam, Southern China *P. lineaticeps* (Chop.)
- General coloration darker: from brown to dark brown; lower part of head dark brown or almost black (Figs 182, 183); most or about half of femora dark brown or black (remaining areas of femora light brown) (Figs 184-187). Northern Vietnam *P. fuscus* Gor.

Parapentacentrus lineaticeps (Chopard, 1969)

(Figs 165-178)

Holotype. ♀, **Burma**, "Burma: Nam Tisang. 3000 ft, 20.IV.1926, F. Kingdon Ward. Brit. Mus. 1927-100" (BMNH).

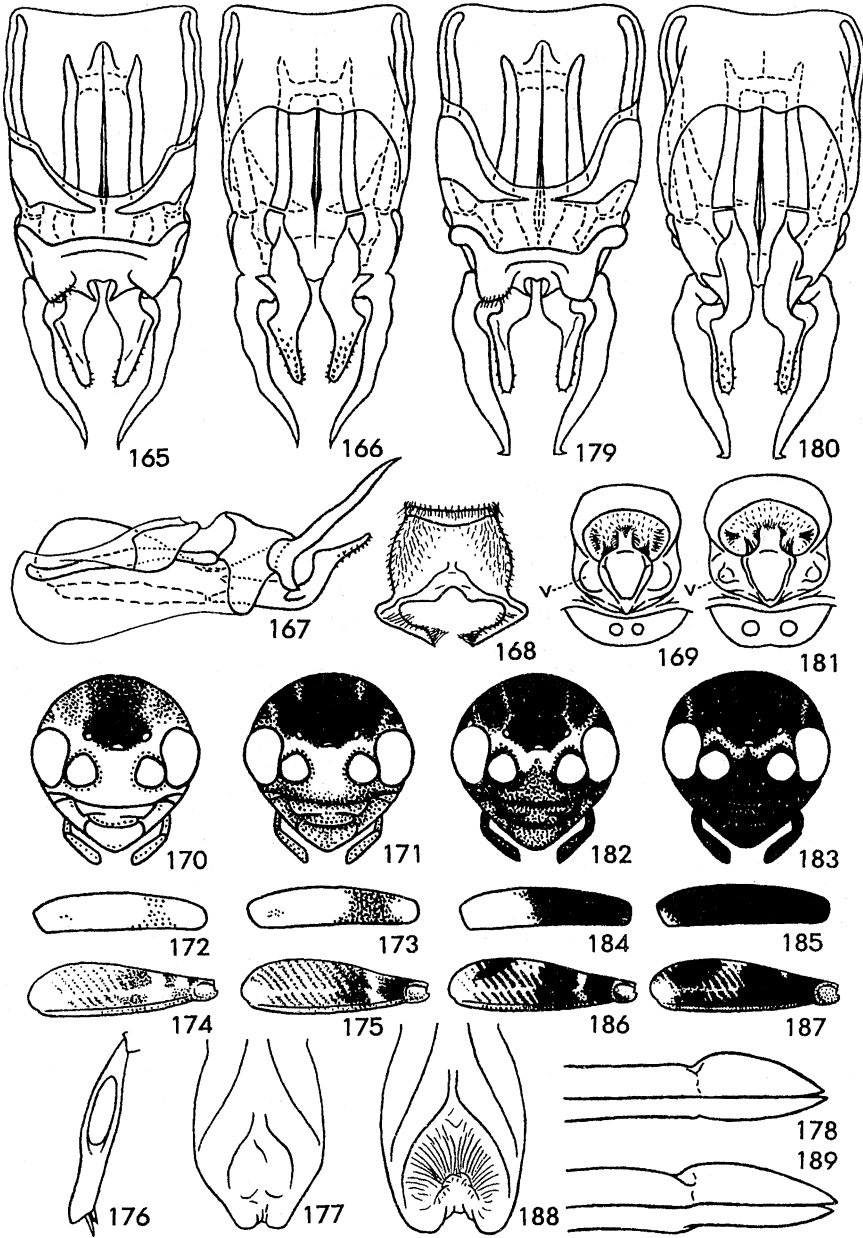
Material. **Burma**: 1 ♂ (paratype), "Burma: Nam Tamai. 3000 ft, 1.V.1926, F. Kingdon Ward." (BMNH). **Vietnam**: 25 ♂, 14 ♀, prov. Vinh Phu, Tam Dao, 800-900 m, at light, 12-13.V.1975 (L.N. Medvedev), 8-13.IV.1986 (A.V. Gorochov), 16-22.IV.1986 (L.N. Medvedev), 17-31.V.1995 (A.V. Gorochov) (ZIAS). **China**: 1 ♀, "Canton. Mell S.V." (MNHU).

Note. This species was described in detail by Chopard (1969: Figs 198, 200, 204). The specimens from Vietnam and China are very similar to type material, but their coloration is slightly various (Figs 170-175). The previous drawings of the male genitalia of this species (Chopard, 1969: Fig. 200; Gorochov, 1988: Figs 98, 99) are not very accurate (see Figs 165-167). It is necessary also to supplement the information about dimensions (Length. Body: ♂ 13-17 mm, ♀ 12-15 mm; body with wings: ♂ 20-23 mm, ♀ 21-24 mm; pronotum: ♂ 1.6-2 mm, ♀ 1.8-2.2 mm; tegmina: ♂ 12-14 mm, ♀ 14-16 mm; hind femora: ♂ 7.3-8.5 mm, ♀ 7.5-9.5 mm; ovipositor 6.5-8 mm).

Parapentacentrus fuscus Gorochov, 1988

(Figs 179-187)

Holotype. ♂, **Vietnam**, prov. Vinh Phu, Tam Dao, 800-900 m, at light, 8-13.IV.1986 (A.V. Gorochov) (ZIAS).



Figs 165-189. *Parapentacentrus* and *Itara*. **165-178**, *P. lineaticeps* (Chop.) (165-168, paratype; 169-178, Vinh Phu); **179-187**, *P. fuscus* Gor. (179-181, holotype); **188, 189**, *I. (Itara) vietnamensis* Gor. (Vinh Phu). Male genitalia from above (165, 179), from below (166, 180), and from side (167); male anal plate (168); metanotal gland (169, 181); head in front (170, 171, 182, 183); outer side of middle (172, 173, 184, 185) and hind (174, 175, 186, 187) femora; inner side of fore tibia (176); hypopharynx from below (177 (proboscis lost), 188 (proboscis with pseudotracheae drawn inside)); distal part of ovipositor from side (178, 189).

Material. Vietnam: 3 ♂, 10 ♀ (paratypes), same data as holotype (ZIAS). China: 2 ♀ (paratype), "Canton. Mell S.V." (MNHU).

Note. The description of this species has been published quite recently (Gorochov, 1988: Figs 91-94, 96, 97, 102, 103). This species is very similar to *P. lineaticeps*, but distinguished by the darker coloration (Figs 182-187), structure of metanotal gland (with small rounded lateral vesicles in *P. fuscus* and with large ones in *P. lineaticeps*; for comparison see Figs 169, 181: v), and minor peculiarities of the male genitalia (lateral articulated process of distal part of epiphallus with small hook; shape of ectoparameres slightly different) (Figs 179, 180).

Parapentacentrus formosanus Shiraki, 1930

Note. The species is known only from the original description (Shiraki, 1930: Fig. 15) based on several syntypes of both sexes from Taiwan ["Formosa – Arisan (IV), Musha (V, VI)"] (TMTIC). Judging from this description, the species is very similar to both previous species, and its coloration is almost identical to that of *P. lineaticeps*. *P. formosanus* differs from *P. lineaticeps* and *P. fuscus* in the long ovipositor, slightly longer than hind femora.

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References

Chopard, L. 1925. Descriptions de Gryllides nouveaux. *Ann. Soc. entomol. France*, **44**: 291-332.
 Chopard, L. 1930. The Gryllidae of Sarawak. *Sarawak Mus. Journ.*, **4** [1 (12)]: 1-42, pls 1-8.
 Chopard, L. 1931. On Gryllidae from the Malay Peninsula. *Bull. Raffles Mus.*, **6**: 124-149.

Chopard, L. 1940. Results of the Oxford University Expedition to Sarawak (Borneo), 1932. Gryllacridae and Gryllidae (Orthoptera). *Entomol. mon. Mag.*, **76**: 189-204.
 Chopard, L. 1968. Gryllides. *Orthopterorum Catalogus*, **12**: 213-500. Gravenhage.
 Chopard, L. 1969. Grylloidea. *The fauna of India and adjacent countries. Orthoptera*, **2**. 421 p. Calcutta.
 Gorochov, A.V. 1985. On the fauna of crickets of the subfamily Gryllinae (Orthoptera, Gryllidae) of eastern Indochina. In: Medvedev, L. N. (ed.). *Nasekomye Vietnam* [Insects of Vietnam]: 9-17. Moscow. (In Russian).
 Gorochov, A.V. 1986. System and morphological evolution of crickets from the family Gryllidae (Orthoptera) with description of new taxa. Communication 2. *Zool. Zhurn.*, **65**(6): 851-858. (In Russian).
 Gorochov, A.V. 1988. New and little known tropical crickets (Orthoptera, Grylloidea). *Trudy zool. Inst. Akad. Nauk SSSR*, **178**: 3-31. (In Russian).
 Gorochov, A.V. 1990. New and insufficiently studied crickets (Orthoptera, Gryllidae) from Vietnam and some other territories. *Trudy zool. Inst. Akad. Nauk SSSR*, **209**: 3-28. (In Russian).
 Gorochov, A.V. 1995. System and evolution of the suborder Ensifera (Orthoptera). Part 2. *Trudy zool. Inst. Ross. Akad. Nauk*, **260**. 213 p. (In Russian).
 Gorochov, A.V. 1996. New and little known crickets from the collection of the Humboldt University and some other collections (Orthoptera: Grylloidea). Part 1. *Zoosyst. ross.*, **4**(1), 1995: 81-114.
 Haan, W. 1842. Bijdragen tot de Kennis der Orthoptera. *Verhand. natur. Gesch. Nederl. overz. Bezittingen (Zool.)*: 45-248, tab. 10-23. Leiden.
 Heller, K.-G. 1985. Zur Bioakustik von zwei tropischen Buschgrillen, *Itara minor* Chopard 1925 und *Phaloria helverseni* n. sp. *Senckenbergiana biol.*, **66**(1/3): 55-66.
 Kirby, W.F. 1906. *A synonymic catalogue of Orthoptera*, **2**(1). 562 p. London.
 Otte, D. 1994. *Orthoptera species file 1. Crickets (Grylloidea). A systematic catalog*. 120 p. Philadelphia.
 Saussure, H. 1878. Gryllides. *Mém. Soc. Phys. Hist. nat. Genève*, **25**(2): 369-702, pls 16-19.
 Shiraki, T. 1930. Orthoptera of the Japanese Empire. Part 1 (Gryllotalpidae and Gryllidae). *Insecta Matsumurana*, **4**(4): 181-252.
 Walker, F. 1869. *Catalogue of the specimens of Dermaptera Saltatoria and supplement to the Blattariae in the collection of the British Museum*. 224 p. London.

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