

PART I.

By the Late G. W. KIRKALDY.

FAMILY *CICADIDAE*.

(The following are not arranged phylogenetically.)

Cicada pontianaka Distant.

Hab. Borneo, Pontianak Muir. Previously recorded also from the Malay Peninsula, Sumatra, Java, and Sulu. The two males before me agree generally with Distant's figures and descriptions, except that either they differ a little as regards the pygophor, or else his figures are bad.

Platypleura canescens (Walker).

Hab. Larat (Muir). Previously also from Sumatra, Banda, Timor Laut, and Aru.

P. nobilis (Germar).

Hab. Borneo, Telok Ayer (Muir). Previously from India, Assam, Java, and Sumatra.

P. lyricen sp. nov.

Male and female closely allied to *ciliaris* (Linneus). Pale greenish-ochraceous; vertex with a large median piceous suffusion which is continued to the margins by broad lines as follows: two lateral on each side (the second actually on the fastigia), and five basal, so that the vertex seems to be piceous with about six marginal pale areas; frons more or less piceous basally, some markings on legs, the tarsi, apex of labium, etc., blackish. Pronotum with a blackish line down the middle reaching to the anterior margin of the hind reflected part, and two or three short oblique lines on each side of this. Mesonotal markings much as in *ciliaris*, anterior half or so of the urotergites dark piceous, the last two or three segments mostly so. Urotergites more or less clouded with fuscous. Tegmina whitish tinged with fawn, with pale golden-yellow pubescence; veins pale yellow, green and red; clavus and base of corium dark, a fuscous oblique band from the exterior margin to the apex of the clavus, on basal third; the middle third and a little apical of that has a number of dark

(thinly margined) rings in two or three rows (which in one doubtful female are almost absent), the apical margin is irregularly fuscous. Wings dark orange-brown, marked much as in *ciliaris*, but much more strongly and clearly cut, with blackish brown.

Structurally this species differs from *ciliaris* in the male by the opercula being remote inwardly, the inner margin, in fact, not extending quite so far inwardly as the hind coxae; they are transverse, and the spine of the hind coxae is long and acute. The male pygophor is bluntly carinate beneath down the middle, apically truncate, very slightly emarginate, broadly sulcate, this sulcation widening in the middle.

Length 9-12 mm.; width of pronotum $10\frac{1}{2}$ -11 mm.; expanse of tegmina 60-67mm.

Hab. Ambonia (Muir).

Baeturia conviva (Stal).

Hab. Amboina and Larat (Muir). Previously from Papua and almost all the Austromalayan Islands. Doubtfully distinct from *B. exhausta* (Guérin)

Scicroptera splendidula (Fabricius).

Hab. Java, Pekalongan, Borneo, Moewong (Muir). Previously recorded from throughout the Oriental region, except the Philippines. The examples before me are intermediate between *splendidula* and *crocea*; they differ from the latter, to which they are more immediately referable, by the immaculate black head, the pale bronzy-fuscous tegmina, with the cells medially paler.

Huechys vidua (A. White).

Hab. Borneo, Moewong (Muir). Previously from the Malay Peninsula.

H. sanguinolenta (Fabricius).

Hab. Macao (Muir). Distributed over almost the whole Oriental region as well as Sumbawa and Timor Laut.

Prasia elegans sp. nov.

Female bright yellowish-green; the apical margin of the head dorsally, narrowly, the base of the vertex, its posterolateral angles broadly, a large portwine glass-shaped mark on the mesonotum,

all the mesonotal margins narrowly (excluding the basal elevation), and two submedian wedges, velvety-blackish. The head dorsally with sparse, short, black hairs. Abdomen above brownish-orange basally and laterally (irregularly) blackish. A silvery pubescent spot basolaterally and a percurrent stripe of silvery pubescence across the fifth urotergite. Beneath blackish with sparing pubescence of mixed silvery and pale golden pubescence. Fore and middle coxae dark crimson, margined narrowly with black, femora black with a broad red stripe inwardly; tibiae and tarsi crimson. Hind legs yellowish testaceous, femora and coxae more or less sanguineous. Tegmina hyaline, basal half of subcostal and radical veins on basal fifth yellow, shading to green up to about the middle, the rest black. Wings hyaline, subcostal and the base green, rest black.

Head dorsally slightly longer than wide between the eyes, vertex produced a little in front of the eyes, apical margin, where not interrupted by the frons, truncate; dorsal part of frons nearly or quite as long as the vertex medially, the latter deeply rotundately emarginate to receive it, anterolateral angles of the middle part of the vertex acute, prominent. Pronotum as long as, or slightly longer than, the head.

Length 15 mm.; width of base of pronotum 6 mm; expanse of wings 46 mm.

Habitat, West Borneo (Muir).

Cosmopsaltria alticola Distant.

Hab. Borneo, Pontianak (Muir).

Variety *Pontianaka* nov. This agrees generally with Distant's description, except that the apical veins have each an infusate spot near the apex.

C. spinosa (Fabricius).

Hab. Borneo, Pontianak (Muir). The basal sides of the first, second, third, fourth, fifth, and seventh apical cells are infusate, and the male opercula extend nearly to the apical margin of the fifth urosternite, not of the fourth, as figured by Distant, otherwise these examples accord.

C. duarum (Walker).

Hab. Borneo, Pontianak (Muir). Previously also from the Malay Peninsula.

Leptopsaltria pryeri Distant.

Hab. Borneo, Telok Ayer (Muir).

Pomponia imperatoria (Westwood).

Hab. Borneo, Telok Ayer (Muir). Previously also from Malay Peninsula, Java, and Sarawak.

FAMILY CERCOPIDAE.

Subfamily Machaerotinae.

I consider that the *Machaerotinae* are simply *Cercopidae* with simplified venation, both of tegmina and wings, and with more or less produced nota; they are a side branch of the *Cercopidae*, and *in no way* a link between them and the *Membracidae*, which are a development of the *Tetigoniidae* (or "*Jassidae*") and lie right on the other side of the latter. The *Membracidae* are simply *Tetigoniids* with modified face and legs, and with a more or less ornamental nota. This development is merely analogical between the *Machaerotinae* and *Membracidae*, and *in no way* homological, as in the former it is mesonotal, in the latter pronotal!

Pectinariophyes Kirkaldy.

The hind tibiae are bispinose, but the basal one is minute.

Polychaetophyes Kirkaldy.

This genus is very close to *Machaeropsis* Melichar, and may prove identical. The head, however, is much shorter and broader, and very much more declivous, the face is broader and shorter, the scutellum is scarcely, or not at all, grooved mediolongitudinally, and the apical cells of the tegmen are four or more, though two or more of these are small.

Machaerota moluccana sp. nov.

Apparently allied to *M. ensifera* Burmeister, but the scutellum is tricarinate, its process much more arched, and the pronotum is not striped. Purplish piceous; the pronotum browner along the posterolateral margin, and the scutellum with a short whitish longitudinal streak basally on each side; the process is brownish-yellow. The face is unicolorous, but has thin, lateral, silvery radiating lines. Fore and middle legs brownish-yellow; hind legs brownish-piceous. Sterna and base of abdomen beneath partly pale. Tegmina yellowish-hyaline, veins brownish-yellow, the costa and subcosta darker for the greatest part of their length. Wings hyaline, veins blackish-brown. Vertex scarcely, though very nearly, as long as in *ensifera*, rounded anteriorly, rather longer than wide between the eyes (or at least as long). Vena-

tion of clavus much as in *ensifera*. The rest of tegmen agrees fairly well with that of *ensifera* as figured by Schmidt, though not by Distant. The scutellum is more arched and the posterior margin is vertical and nearly as long as the distance between it and the pronotum; it is strongly compressed and tricarinate along the top, the lateral keels being evanescent anteriorly, the middle one evanescent posteriorly; the process is arched and rounded, the posterior being deflected. Head and pronotum slightly carinate longitudinally.

Length to apex of abdomen $6\frac{1}{2}$ mm.; to apex of process in straight line $9\frac{1}{2}$ mm.; to apex of closed tegmina $8\frac{3}{4}$ mm.

Habitat Amboina (Muir, Nov., 1907).

FAMILY *FULGORIDAE*.

The type of the genus *Fulgora* has been wrongly determined by all recent authors. The genus was erected by Linneus in 1767 (Syst. Nat. (Ed. 12) I 703), and the type was fixed by Sulzer in 1776 (Abgek. Gesch. Ins. 85), as *europaea* Linneus. This being the earliest genus, the superfamily and family take their names from it. For *Fulgora* auctt. (type *laternaria* Linneus), the name *Laternaria* Stal 1866 should be used. The subfamily formerly known as "*Fulgorinae*" should be known as *Lystrinae*.

Subfamily *Lystrinae*.

Cyrpoptus suavis Stal.

Habitat Mexico, Cuernavaca (Koebele). The males are as figured in the "Biologia," but the females have the orange-yellow of the tegmina and wings replaced by sanguineous; the head, pronotum and scutellum are pale reddish-brown and the tergites dark orange-brown, in the latter sex.

Birdantis sp.

A somewhat immature specimen from Amboina (Muir), may be *delibuta* Stal (from Ternate), but I can not obtain the description; it is not *decens* or *pallescens*. If this specimen is, as I suppose, a *Birdantis*, then Stal was right in supposing that it ought to be placed in his "54" division, as the "claval vein" runs into the commissure before the apex of the clavus.

Scamandra merope sp. nov.

Apparently near *S. hecuba*, but differently colored. The upper surface dark greenish-brown; metanotum and underside, with

legs, mostly blackish-brown, the femora very obscurely spotted with brown. Tegmina bright red-brown on basal three-fifths, rest yellowish-brown; an irregular, non-continuous blackish fascia across the tegmina just basal of the division; there are also one or two obscure spots on the basal part. Veins mostly concolorous with the ground color; the costal vein, basal cell, etc., blackish. Wings scarlet; a basal spot bluish-black; apical third continuous with hind margin and anal area, yellowish-brown, paling gradually to anal area. The red discal color is bordered apically with blackish. Two large spots on the vertex; the scutellum; abdomen above especially basally; some specks on the gastrophleures; and the tegmina largely, as well as some specks on the wings, covered with a cretaceous exudation. The frons is longer than wide, and there is a rather obscure sublateral keel (on each side), and an obscure median one only extending about one-third of the length. Apical half of clypeus keeled.

Length 18 mm.; expanse 53 mm.

Hab., Telok Ayer and Pekalongan (Muir).

Eurinopsyche arborea sp. nov.

Differs from *obscurata* by the size of the eyes, which in the latter are small, but in *arborea* occupy almost the whole height of the head in profile. The head is rather shorter than the abdomen, and the labium extends to the apex of the latter.

Length 20½-21 mm.

Hab.: Queensland, Brisbane, and Bundaberg (Perkins); arboreal.

Subfamily *Fulgorinae* (= *Dictyophorinae* Oliv.)

Udugama splendens (Germar).

I refer to this species some examples from Macao (Muir; also in my collection from J. C. W. Kershaw). It has also been recorded from India, Ceylon, Burma, Philippines, and Java. The sexes are somewhat dissimilar in size and color. The examples before me may take the varietal name *tibialis*, the fore and middle tibiae being distinctly bi- or triangulate with brownish, a character not apparently mentioned in any descriptions of the typical form. Melichar adds *Dictyophora indiana* Walker as a synonym, a name which Distant ignores.

Electryone gen. nov.

Differs from *Putala* Melichar by the vertex being regularly narrowed towards the apex, while in *Putala* it is suddenly narrowed before the eyes; the hind margin of the pronotum is ob-

tuse-angularly emarginate, while in the latter it is somewhat rounded; the scutellum is rather flattish, while in *Putala* it is convex. Type *macaonica*.

E. macaonica sp. nov.

In appearance very similar to *Putala maculata* Distant, which apparently belongs to this genus, but differs as follows:

Vertex much shorter, scarcely longer in front of the eyes than the rest of the vertex, and more rounded apically; the radial vein very distinctly forked a little nearer the apex than is the medial vein; otherwise the venation is very similar; tegmina apically more fuscate. Frons much shorter, basal of the eye scarcely longer than a half of the rest; there are three keels (within the lateral keels), one median and two submedian, the latter meeting basally subroundedly.† Coxae and apical third of front tibiae dark piceous.

Length 8 mm. to apex of abdomen, 10 mm. to apex of tegmina.

Hab.: Macao (Muir; also in my collection from Kershaw).

Miasa smaragdilinea (Walker).

Hab.: Borneo, Moewong (Muir). Previously recorded from Tenasserim and Malacca. The examples agree fairly well with Distant's redescription and figure (1906 Faun.Ind.Rh.,III. 248, f.108), except that the frons is unicolorously ochraceous, and the clypeal band, etc., are creamy white. Beneath, the abdomen is orange-brown, the apical margins of the segments narrowly greenish, the lateral margins dark fuscous; the pygophor more or less dark fuscous.

Acarna sp.

Hab.: Borneo, Moewong (Muir). Probably new, but unfortunately I have not seen some of the Stalian descriptions in this genus.

Fulgora Linneus (= *Dictyophora* Germar).

This genus is decidedly heterogeneous and badly in need of revision. *Nersia* Stal is not, as Distant says, synonymous with *Dictyophora* (i. e., *Fulgora*), *bovina* may be taken as its type.

F. herbida (Walker).

Hab.: Mexico; Cuernavaca (Koebele). The two specimens agree very fairly with Walker's description, but not so well with

† Distant's figure must be faulty, as it shows only two keels within the lateral ones.

Distant's figure in the "Biologia," as the mesonotum is actually greenish; the stigma, moreover, is not represented in the figure and the venation does not quite correspond. For these two specimens, I found the subgenus *Cuernavaca*, separable from *Fulgora* (type *europaea*) as follows:

Vertex scarcely extended before the eyes, the lateral keels meeting roundedly in front; the middle keel visible only near the base. Pronotum very obscurely keeled, anterolateral margins somewhat rounded. The lateral keels of the scutellum are arched outwardly. The frons scarcely extends backwards from the eyes and is somewhat rounded basally; the lateral margins diverge towards the apex, but narrow again just before it; the sublateral keels form an elongate oval, not touching the other margins at any point, the middle keel being percurrent within them. Clypeus feebly carinate. Tegmina much less reticulate; stigma four-celled. As in *Fulgora*, the hind coxae are acutely spined; the hind femora are four-spined; the labium reaches to the hind trochanters.

In the following species the hind margin of the pronotum is minutely, but very distinctly, notched in the middle, whereas in *F. europa* it is notched almost imperceptibly.

Fulgora nereides sp. nov.

Belongs to, or near, the typical subgenus. Head green, the vertex between the lateral keels, the dorsal part of the genae and the middle keel (suffusedly) of the frons, red. Clypeus yellow, the basal half of the keel red. Underside yellowish. Pronotum and scutellum reddish (or sometimes sordid yellowish-green), the keels (suffusedly on pronotum) green. The main veins of the hyaline tegmina are more or less orange-yellow, those on the apical third yellowish-fuscous, the rest greenish. Legs yellowish-red, greenish on coxae and at base of femora; extreme apex of femora, apex of tibiae and apical segment of tarsi, blackish. Vertex not quite so long as the scutellum, ascending a little in front of the eyes at about 45 degrees, the lateral keels arched outwards at first to a little beyond the eyes, thence converging acuminate, so that part of the obliquely-lying genae is clearly visible dorsally; at the extreme apex, a part of the frons is also visible dorsally. The frons is very elongate, the lateral margins strongly narrowed towards the base, and slightly widened at the apical margin; medial and lateral keels of frons and clypeus strong, but the submedian keels of the former are obsolete on the apical half; the lateral keels are not visible, ventrally, at the base itself. The hind femora have five spines; hind tibiae about two and a half times longer than the femora. Antennae small, but larger than in

europaea, second segment subglobose, apically oblique, the flagellum not arising from the apex.

Length 13 mm. to apex of abdomen; 17 mm. to apex of tegmina.

Hab.: Amboina (Muir); Borneo, Telok Ayer (Muir).

F. glaucides sp. nov.

Superficially not unlike *F. nereides*, but the head is much less ascendant, and there are eight femoral spines.

Head and prothorax green, rest of the thorax and abdomen more or less yellowish, mostly rather pale. A percurrent stripe from base of pronotum to apex of vertex, another from base of frons to apical margin, another from anterior angle of genae to base of propleura (interrupted by the eye), a sublateral oblique (more obscure) stripe on pronotum, sanguineous. Scutellum more or less suffused with green. Middle keel of clypeus pale sanguineous. Costal vein fuscate, tinged with sanguineous at base; other veins more or less greenish on basal third, shading into tawny on middle third, and into fuscous on apical third, but all a little intermixed. Coxae, femora, and hind tibiae, greenish; fore femora and hind tibiae more or less tinged with brownish on apical half or so (varyingly). Head very little ascendant, about as long as the scutellum, $3\frac{1}{2}$ -4 times as long as width between the eyes; lateral margins subparallel to about a little in front of the anterior margin of the eyes, thence acutely converging; the rounded outline of the obliquely lying genae is visible dorsally; also the actual apex is rounded, owing to part of the frons being visible. The frons is very similar to that of *nereides*, except that it is a little less elongate, and more rounded anteriorly, and not so elongate after the disappearance of the genal keels. Apical venation much as in *nereides*. Hind tibiae about 3 times as long as the femora, with eight spines, the five basal small but distinct, the three apical large.

Length 12 mm. to apex of abdomen, 17 mm. to apex of tegmina.

Hab.: Borneo, Telok Ayer (Muir).

F. borneides sp. nov.

Scarcely separable from *F. europaea* by color and pattern. Structurally it may be separated as follows:

Vertex slightly longer, and the lateral margins almost straight, less acute apically; the genal margins as seen dorsally are more arched outwardly. The claval veins unite in the same line as the forking of the brachial, instead of distinctly basal of it; the cells formed by the forking of the main veins are distinctly longer,

and the tegmina themselves are much longer; also the apical third is less reticulated. Frons rather longer and narrower, more rounded basally, apical margin very slightly narrower than base of clypeus. Antennae a little more globose.

Length 10 mm. to apex of abdomen, 16 mm. to apex of tegmina.

Hab.: Borneo, Moewong (Muir).

Amboina gen. nov.

Superficially like a long-headed *Hasta*, but distinguished, from all the old-world *Fulgorini* near the typical genus, by the lack of a stigma, and the *comparatively* long antennae.

The general characters are those of *Hasta*, but it differs as follows: The head anteriorly widens but a little at the apex; it is distinctly narrowed and constricted between the eyes. The eyes are comparatively large and prominent and well rounded exteriorly. The antennae, though short, are yet not of the microscopical size usual in this division, but are distinctly visible from above. The pronotum is much longer medially, being about half the length of the scutellum. The frons is five-carinate, the submedian keels being obsolete between the base of the clypeus and the constriction. The clypeus is very obscurely keeled. The labium reaches the hind trochanters, the third segment being much longer than the fourth. Tegmina more closely reticulated on the apical third, more as in typical *Fulgora*; stigma lacking, but there are about eight suboblique veins on the apical third of the exterior area. The legs are all long and slender, the hind tibiae being more than three times as long as the femora; the latter have five spines, but the basal one is very obscure. Fore femora spineless. Abdomen elongate. Type *moluccana*.

A. moluccana sp. nov.

Male grass green, shading off in parts into pale yellowish-green; metasternum whitish; lateral margins of vertex very narrowly sanguineous. Head nearly twice as long as the pronotum and scutellum.

Length 19-19½ mm.

Hab.: Amboina (Muir).

Orodictya gen. nov.

Differs from *Thanatodictya* as follows: the elongate vertex is not sulcate (the lateral keels being obsolescent) except between the eyes. The disks transversely rugulose, as also beneath and laterally. (The middle keel is apparently only between the eyes as in *Thanatodictya*.) The vertical process is very slightly en-

larged at the tip where it is rounded. The five frontal keels are all percurrent. Eyes elongate, not rounded laterally. Hind tibiae with seven to nine spines. Lateral keels of pronotum obsolescent. Apical margin or tegmina broadly multireticulate.

Superficially rather like *Acarina* Stal, but the front is not angulately amplified; the pronotum is rather deeply emarginate, the fore tibiae are not at all dilated and the hind tibiae are at least quadrispinose apical of the middle.

O. monticola sp. nov.

Pale olivaceous-brown. Keels most greenish (or pale yellowish). Beneath pale yellowish, tinted in parts with greenish or brownish. Fourth segment of labium blackish. Legs very pale greenish, apical one-third of the whole tibiae darker green, basal two-thirds yellowish, apex of hind tibiae and the hind pairs, reddish. Tegmina hyaline, veins dark crimson red (except the green costal). On the apical one-third of tegmen, the crossveins are infusate, and the apical margin from near the claval apex to the base of the stigma, is broadly (irregularly) reddish ferruginous. The stigma has five or six cells, but is rather confused apically. Wing veins blackish, the apical margin infusate. Length from tip of head to apex of closed tegmina 22 mill., length of head $5\frac{1}{2}$ mill.

Hab.: Borneo, Moewong (Muir).

RICANIINAE.

Armacia hyalinata (Donovan).

Hab.: Amboina (Muir). Previously also from New South Wales, Papua, Solomon Islands and Ternate.

Ricania speculum (Walker).

Hab.: Borneo, Pontianak, and Telok Ayer (Muir). Previously also from India, Assam, Ceylon, Burma, Tenasserim, Oriental China, Philippine Islands, and Java. Melichar adds (but perhaps through mistaken synonymy) Waigiu, Flores, Singhapur, Siam and Sumatra.

Ricania moluccana sp. nov.

Sooty; labium and legs yellowish-brown, femora, apices of tibiae, etc., dark fuscous. Abdomen piceous. Tegmina dark smoky, partly with a purplish submetallic glint; a small round purplish metallic spot near the middle of the corium, a series of yellow specks at the end of each costal veinlet as far as the stigma,

also a series of smaller byaline specks along the apical margin. Vertex very transverse. Keels of pronotum, scutellum and frons very distinct. Four veins arise from the basal cell, the radial and subradial running parallel. Shape of tegmina much as in *decorata*, but the apical margin rather longer and the hind margin rather shorter in proportion.

Length of body 4 mill.; expanse of tegmina 14 mill.

Hab.: Amboina (Muir).

This appears to belong to *Ricanoptera*, which I can regard only as a subgenus of *Ricania*.

Ricania indicata Melichar.

Hab. Amboina (Muir). Also previously recorded from Ke and Timor Deli.

Ricania stigmatica var. *borneensis* nov.

Hab.: Borneo, Telok Ayer (Muir). It has no white stigmal spot. *R. stigmatica* was recorded from Java.

Ricania laratica sp. nov.

Apparently near *eximia*. Head pitchy brown, vertex and genae partly browner. Pronotum, scutellum, pro- and mesosternum sooty. Tegmina dark smoky, veins blackish, a pale ocellate stigmal spot, and a white wedge-shaped spot on the costal margin near the apex, and another similar one near the apex on the apical margin. A small obscure hyaline speck about the middle. The basal third of the costal margin speckled with yellowish. Abdomen more or less brownish-pitchy. Legs brownish-yellow, more or less dark fuscous on femora and apex of tibiae. The tegmina are sprinkled more or less with greenish-yellow.

Length of body 6 mill.; expanse about 18 mill.

Hab.: Larat (Muir).

The three specimens before me are practically identical. The keels are well marked, the submedian ones on the scutellum being rounded from the apical margin instead of being sinuate, as in *indicata*.

Pochazia fuscata (Fabr.).

Hab.: West Borneo, Telok Ayer (Muir). Previously from India, Burma, Tenasserim, Malay Peninsula, Sumatra, and Java.

Sassula dyakana sp. nov.

This species differs from *sororcula* by the radial vein not being forked; from *osmyloides* by the different venation.

The spotting of the vertex and nota is not unlike that of *sororcula*; the frons has three short, dark, lanceolate lines at the base between the four keels; there is also a dark spot on each side (inside the lateral keels), near the antennae, and another at the apex of each submedian keel just apical of the basal margin; there is no other specking or spotting on the frons, which is distinctly wider and shorter apically of the antennae than in *osmyloides*, and the lateral margins are more sinuate. The costal area is distinctly wider than the subcostal area; there are two spots on the subcostal area near the base. The venation of the corium is very much like that of *sororcula*.

Length 10 mill.; expanse of tegmina 33 mill.

Hab.: Borneo, Telok Ayer (Muir).

Gaetulia nigrovenosa Melichar.

Hab.: Java (Muir). Previously recorded from India, Assam and Tenasserim.

Nurunderia chrysopoides = *Gaetulia chrysopoides* Kirkaldy.

Distant has (1909 A. M. N. H. (8) IV.337) erected the genus *Nurunderia* for this species.

Mindura obscura (Fabr.) = *sundana* Kirkaldy.

Hab.: Amboina (Muir). Previously found in Java and South India.

Nogodina pallidipennis (Guérin).

Hab.: Amboina (Muir). Previously also from New South Wales and Vanikoro.

FLATINAE.

Amphiscepa bivittata (Say).

Hab.: Mexico, Morelos (Koebele). Previously recorded also from Canada and the United States.

Amphiscepa immaculata Kirkaldy.

Hab.: Mexico, Orizaba. Previously from South Arizona.

Neomelicharia guttulata (Stal).

Hab.: Amboina (Muir). Previously known from Buru.

The ground color of the tegmina may be milky or yellowish-green. The anteroapical angle of the tegmina is often black, as also a spot at the apical angle of the clavus and another near base

of the same interiorly. The pattern is exceedingly variable. The forms which have milky-white tegmina (this does not appear to be a post-mortem change) may be called var. *lactealis*.

Neomelicharia ocellifera (Walker).

Hab.: Ambonia (Muir). Previously known also from Ceram and Java.

Colgar chlorospilus (Walker).

Hab.: Amboina (Muir), with vars. *decolor*, etc. Previously reported from Papua and Birara.

Colgar laraticus sp. nov.

Green, paler beneath, scutellum yellower. A rather broad stripe from apex of vertex to apex of metanotum, all the margins of the tegmina (except the extreme base of the costal), fore and middle tibiae, the frontal keels very narrowly basally, etc., bright crimson; tegmina otherwise immaculate. Vertex very slightly longer than pronotum, rather more sharply keeled than in the other species of this genus (as also on pronotum and scutellum), thus approaching *Phyllyphanta*. Frons with three keels, much as in *chlorospilus*. Anteroapical angle of tegmina acute, posteroapical angle rectangular, slightly rounded.

Length of body 7 mill.; expanse of tegmina about 18 mill.

Hab.: Larat (Muir).

In immature individuals, the red is replaced by pale orange. It is possible that this is only a var. of *surrecta*, which I do not know.

Colgar granulatus sp. nov.

Very similar to *laraticus*, but the tegmina are distinctly broader, especially basally; the red stripe is absent, only the apex of the head being a little reddish. The red margination of the tegmina is very narrow and obscure. The ground color of the tegmina is yellowish-green, the veins being suffusedly greener, and especially on the apical half being excessively minutely granulated with purplish-brown.

Length of body 8 mill.; expanse of tegmina 20-21 mill.

Hab.: Larat (Muir).

Colgar surrectus (Melichar).

Hab.: Larat (Muir).

Phyllyphanta producta (Spinola).

Hab.: Borneo, Telok Ayer (Muir). Previously known from Sumatra, Banguay, Java, Celebes, and Cochin China.

Salurnis kershawi sp. nov.

Head, pronotum and scutellum pale orange-brown, the disk of the pronotum and of the scutellum pale greenish-yellow, the former with a red-brown stripe down each side of the middle, the latter with an outwardly curved submedian pale brown stripe, meeting apically and basally. A broad fuscous stripe down the middle of the vertex, a fuscous spot at middle of the apical margin of pronotum and of scutellum. Sterna and abdomen pale, the latter more or less yellowish above. Tegmina pale yellowish-green, the veins suffusedly pale fuscous, the commissural margin suffusedly so. Wings milky white. Legs testaceous, tarsi, fore tibiae, etc., pale yellowish-brown. Vertex about half as long as the pronotum, scarcely half as long as the width of the head between the eyes. Anterior margin of pronotum rounded, subtruncate in the middle. Tegmina costally strongly arched, apical angle rounded, posteroapical angle acute, prominent. No sensory granules on corium.

Length of body 7 mill.; expanse of tegmina 19 mill.

Hab.: Macao (Muir; also in my collection from J. C. W. Kershaw).

There are two sublateral, outwardly arched, keels on scutellum, and between these, on each side of the middle, a more obscure one. This species is very similar to *marginellus*, but is yellower, and the vertex distinctly shorter, and the pronotal keels more distant. It seems to lead the way to *Siphanta*.

Salurnis marginellus (Guerin).

Hab.: Borneo, Telok Ayer (Muir). Previously recorded also from India, Tenasserim, Malacca, Cochin China, Shanghai, Kiang-Sin, and Nicobar Islands.

Siphanta javana sp. nov.

This has the characters of *acuta* (Walker), but is distinctly smaller with the anteroapical angle of the tegmina less prominent, and is distinguishable at once by the numerous tubercles on the tegmen. It is smaller than *acutipennis* Kirkaldy and has a distinctly shorter vertex. It is separable from *patruelis*, the other Javan species, by the rounded vertex and narrower frons.

Length 5 mill.; expanse of tegmina about 18 mill.

Hab.: Java, Pekalongan (Muir).

Mimophantia maritima Matsumura.

Hab.: Amboina (Muir). I cannot see any difference of importance between these Moluccan specimens and the descriptions of those from Japan.

Phyllodryas gen. nov.

Vertex very short, its apical margin touching the apical margin of the pronotum in the middle. Frons about as long as wide, lateral margins rounded, acute, reflexed; with a median keel which is not quite percurrent apically. Pronotum not, or very obscurely, carinate. Scutellum with three very obscure keels. Tegmina scarcely twice as long as their middle width, outer fork of the brachial vein joined to the inner fork of the median by two or three short, transverse veins; a regular, transverse, subapical line close to the apical margin, apical angles well rounded. Hind tibiae with one spine. Type *calamantina*.

This genus has some resemblance to *Paratella*, which, however, has no subapical line and has different venation; it differs from *Hilavrita* by the unispinose hind tibiae; from *Petrusa* by the tegmina having one subapical line; and from *Tejasa* by the presence of a number of transverse lines basal of the subapical line. From all these, moreover, it differs by the presence of a few veins in the clavus, but does not come near any of the other genera thus characterized. It has considerable resemblance to *Odyxa truncata*? Distant (not Melichar), but has only one subapical line; Distant figures none, in the supposed Linnean species, but says that it might well be placed in *Cryptoflata*, i. e., *Flata* Fabr., but the latter has more than one subapical line, according to its founder, though not according to Distant, and has two femoral spines.

Melichar's species has evidently, from the description, nothing to do with the supposed Linnean type, the shape of the tegmina alone showing this, and may be renamed *melichari*.

Phyllodryas calamina sp. nov.

Male and female pale greenish or testaceous; tegmina creamy, apical margin (apical of the submarginal line) and the commissural margin in part, pale yellowish fuscous.

Length of body 5 mill.; expanse of tegmina 17 mill.

Hab.: Borneo, Telok Ayer (Muir).

Nephesa rosea (Spinola).

Hab.: Borneo, Telok Ayer (Muir).

Nephesa aurora sp. nov.

Pale brownish-testaceous; apical margin of the second segment of the antennae, third segment of the hind tarsi, etc., fuscous. Tegmina pale rosy, the apical margin and the apical half of the hind margin, pale orange-brown; wings milky. Vertex very short and transverse, the rounded frons partly visible dorsally. Middle keel of pronotum very obscure. Tegmina elongate, apical margin very oblique, apical angles rather prominent, rounded.

Length of the body 12 mill.; expanse of the tegmina 53 mill.; lengths of the fore, apical and hind margins, respectively, of the tegmina, about 25, 13 and 18 mill.

Hab.: Amboina (Muir).

Nephesa coromandelica (Spinola).

Hab.: Borneo, Telok Ayer (Muir). Previously known from Java. The South Indian record is perhaps incorrect.

Hansenia kirbyi Melichar.

Hab.: Borneo, Pontianak (Muir). Previously known from Ceylon. Distant (1906 Faun. Ind. III. 411) synonymizes this with *glauca* (Kirby), apparently incorrectly.

Ormenis dolobrata Fowler.

Hab.: Mexico, Morelos (Koebele).

Ormenis plebeia sp. nov.

This species has the general appearance of *dolobrata*, but differs as follows:

The vertex is distinctly narrower and the eyes smaller; the frons is much less narrowed towards the apex and is scarcely a fourth narrower at the apex than at the base (instead of about one-half); the frontal keels are very obscure, and instead of being truncate, the apical margin of the frons is slightly emarginate. In *dolobrata* the hind margin of the pronotum is obtuse-angulately emarginate; in *plebeia* it is roundly so, and the hind angle of the scutellum is much less elongate and prominent. The pronotum and scutellum are pitchy-brown, the head paler, frontal keels yellowish-brown. In the tegmina the pale spot is much less clear and the apical third is rather more closely reticulate. The clavus is distinctly more strongly granulate. Legs browner.

Lengths of body $6\frac{1}{2}$ mill.; to apex of tegmina 9 mill.

Hab.: Mexico, Cuernavaca (Koebele).

ISSINAE.

Hemisphaerius Schaum.

This genus is in a very unsatisfactory state, despite the revisions of Butler and Melichar. These revisions have been made practically entirely on color and pattern, which are, judging from the material before me, somewhat variable, certainly rendering invalid Melichar's preliminary divisions of dark and pale forms. At the same time I have made a new species on color and pattern, as I have not the necessary material in other species to form an opinion as to what structures are valuable for specific purposes.

Hemisphaerius moluccanus sp. nov.

Male and female not very shining. Vertex, basal margin of frons, a transverse stripe on the frons at the apical margin, antennae, pronotum, scutellum, legs, etc., ochraceous. Clypeus and rest of frons, genae, and most of the abdomen beneath, dark piceous. Tegmina ochraceous, very closely lined irregularly longitudinally (and shortly furcately) and specked with pale greenish. Vertex more than twice as wide as its length, not longer (scarcely as long) than an eye, with two pits.

Length to apex of tegmina 4 mill.

Hab.: Amboina (Muir).

Hemisphaerius javensis Melichar.

Hab.: Larat (Muir). Previously recorded from Java. One example is suffused with rosy. This species also varies as follows. The tegmina from uniform pale green to piceous, there being intermediate forms. The frons from immaculate green to blackish with a pale green transverse stripe at the apical margin.

The nymph is like the adult, except that the hind tibiae are rather dilated; the clypeus is pale green.

The nymph has a double row of oblique granules on the pronotum, the apical the longer. The large development of the tegmina makes the hopper very wide. The hind tibiae are flattened and widened and have one median spine.

The coloring is pale greenish, yellower on head and pronotum, the urotergites very closely specked with brown. Legs brownish-yellow, femora more or less infusate. Sternopleurites mostly fuscate.

Hemisphaerius tristis Stal var. *lineatalis* nov.

Hab.: Amboina (Muir). The type was from Batchian.

This agrees with the description of *tristis*, as far as it goes,

except that the pronotum is almost entirely ochraceous (this varies somewhat), and there is a generally percurrent ochraceous line down the scutellum.

Gelastissus albolineatus Kirkaldy.

Hab.: Amboina. Previously from Queensland.

G. histrionicus Kirkaldy.

Hab.: Amboina. Previously from Queensland.

G. suffusus Kirkaldy is merely a variety of this; one of the Amboina specimens has the apical parts of the tegmina piceous.

Lollius furcifer Stal.

Hab.: Amboina (Muir). Previously from Timor, Batchian, Ke, Solomons, Fiji, and the Nicobars.

Thaebena stali, Melichar.

The type of this genus, which Melichar could not trace, was fixed by Stal as *retractus* (Walker). The present species differs from that, by the frons being much longer than broad, while the head pronotum, frons, etc., are the same color, viz., reddish-ochreous. From *T. stali* Melichar (typical) it differs only by the lateral margin of the vertex diverging emarginately, roundly, towards the base which is wider than the apical margin. It is slightly wider at base than long.

Hab.: Borneo, Moewong (Muir). Previously from Singapore.

Capelopterus bimaculatus Melichar.

Hab.: Amboina (Muir). Papua.

Aphelonema vespertina sp. nov.

Allied to *A. rugosa* (Ball), but the clypeus has no pale median line, and the vertex proper is roundly triangular.

Pale yellowish-testaceous, lateral margins of the vertex proper, of the pronotum, and of the flat part of the scutellum, pale piceous, the sloping sides of the scutellum dark piceous. Frons slightly clouded with fuscous on its flat disk, outside the circular keel it is almost entirely dark piceous, as also are the genae between the eyes and antennae, and clypeus (except at extreme base). Tegmina pale, laterally indefinitely pale fuscous, venation white. Urotergites medially pale olivaceous, a very narrow white undulating line separating this from the dark piceous hue

which suffuses most of the lateral part, especially towards the middle. The median part might be flecked with pale purplish-red. Beneath dark piceous with a few irregular yellow spots; coxae mostly dark piceous; tibiae with dark piceous bands, etc.; antennae black. The pustules are pale and well marked on the frons outside the circular keel, and on the pronotum, scutellum, and urotergites laterally. The vertex is as long as the pronotum, and is roundly triangular, the parts of the frons outside the circular keel being thus visible from above. Tegmina are formed much like those of *rugosa*. The outer keels of the frons form a circle, which does not touch the clypeus, but touches the vertex.

Length 3.5 mill.

Hab.: Mexico, Chapultepec (Koebele).

Bruchomorpha dorsata Fitch.

Hab.: Mexico, Morelos, Cuernavaca (Koebele). Previously recorded from all over the United States.

The nymphs have very much the same form and coloring, except that the face is declivous.

Bruchomorpha mexicana sp. nov.

Pale yellowish-cinereous; vertex with four not perfectly defined blackish spots; frons pustulate, irregularly, blackish outside the oval keel, and of the same suffusion laterally and basally inside it; Genae mostly blackish; hind margin pale; pronotum very thickly pustulate and slightly clouded. Disk of scutellum slightly fuscous towards the hind angle; oblique sides thickly pustulate and more or less blackish-brown. Tegmina pale brownish-olivaceous, veinings pale. Urotergites thickly blotched and spotted with blackish-brown. Sterna pale brownish-yellow, most of the ambulacra of the middle legs black. Urosternites pale brownish-yellow, laterally blackish, this almost meeting basally. Legs pale brownish-yellow, irregularly marked with dark fuscous. Labium the same ground color, extreme apex dark.

The frontal keels are very strongly marked, the curved keels forming an oval, truncate basally, and roundly acute apically, the whole not so elongate apically as in *dorsata*. The frons is almost horizontal to the vertex, and the clypeus is apically horizontal to the frons, which is about one-half longer than its basal width. The tegmina are formed much as in *pallidipes*.

Length of female 3 mill., breadth 1.75 mill.

Hab.: Mexico, Cuernavaca (Koebele). Very different to any other *Bruchomorpha*.

Hysteropterum montezuma sp. nov.

Differs from *H. montanum* by the much shorter vertex, the angulate (or at least medially deflected) clypeus, the color, etc.

Testaceous, irregularly and obscurely, clouded more darkly. On the frons there are two transverse, obscurely indicated, pale bands, the rest minutely and thickly speckled. Tegmina greyish-testaceous, a broad blackish wedge from hind angle of scutellum to near the costal margin, as the base, the third angle about the middle of the tegmen a little inward; the two third angles (on each tegmen) are joined by an obscurely indicated dark, sinuate, transverse bands. The rest of the tegmen is closely speckled more darkly. Abdomen and legs yellowish-testaceous, irregularly marked with black. Although the vertex is short, yet the frons is distinctly longer than wide, and there is a median percurrent keel which thickens in the clypeus. Pronotum nearly twice as long as the head. Scutellum rather obscurely tricarinate.

Length 4.25 mill.; breadth 2.8 mill.

Hab.: Mexico, Cuernavaca and Yantepec (Koebele).

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