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# MALAYAN BLATTIDÆ.

## PART II.

By R. HANITSCH, PH.D.

(With Plates XII and XIII.)

In a former number of this Society's Journal, I published a paper on "Malayan Blattidæ,"\* which was mainly a compilation of the original descriptions of all species found within the Malayan sub-region which had come under my notice at the time, together with the descriptions of a number of new species.

The present pages are intended to be supplementary to the former paper and contain (1) several original descriptions, chiefly by Brunner von Wattenwyl, which had previously escaped me; (2) descriptions of a few new species published during the last eight years; (3) records of new localities when a species is recorded for the first time from one of the four great divisions of the Malayan sub-region, viz. the Malay Peninsula, Sumatra, Java or Borneo; (4) the descriptions of 23 new species chiefly from material which I have received since my retirement from Singapore from Major Moulton, late Director of the Raffles Museum; Mr. C. Boden Kloss, the present Director; Mr. H. C. Robinson, Director, F. M. S. Museums; Dr. Karny, of the Buitenzorg Museum; Dr. Eric Mjöberg, Curator of the Sarawak Museum; Professor C. F. Baker, of Manila, and the Rev. G. Dexter Allen. Finally, the collections of the Hope Department, University Museum, Oxford, where I have carried on this work, contained some unidentified material upon which I have ventured to base the descriptions of several new

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\*"Malayan Blattidæ" in Journal, Straits Branch, Royal Asiatic Society, No. 69, pp. 17-178, pls. I.-VII. (1915).

species. My sincerest thanks are due to the above-named gentlemen, also especially to Professor Poulton, F.R.S., who, as on former occasions, placed the rich collections of his department at my disposal and assisted me in every possible way.

Species which had already been fully dealt with in my former paper, have not been included in this, except in cases of records of new localities. But the appendix contains a list of all Malayan species described up to the present, with their geographical distribution and references both to this and the former paper. The lists of synonyms, given in full before, have not been repeated here.

The illustrations contained in the two coloured plates of this, as of the previous paper, were prepared by Mr. Valentine Knight, whilst he and I were still in Singapore, and I am much indebted to him for his artistic and careful work. Two of the text illustrations (Figs. 18 and 27) were drawn in Buitenzorg under the direction of Dr. Karny and appeared in my paper on the "Blattidæ of the Buitenzorg Museum" (*Treubia*, Vol. III., pp. 197-221 (1923)), and I have to thank Dr. Dammerman, Director of that institution, for kindly allowing me to reproduce them here. The other text illustrations are my own attempts.

The types of all species described here as new are preserved in the Oxford University Museum.

# MALAYAN BLATTIDÆ.

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## Sub-family 1. ECTOBINAE.

### **Theganopteryx apicigera** Walker. (Plate XII, fig. 1.)

*Theganopteryx apicigera* Hanitsch. J., S.B., R.A.S., No. 69, p. 26 (1915).

Previously recorded from Borneo, Sumatra and Java. Since taken on the Malay Peninsula, viz: at Ginting Bidei, Selangor (C. B. Kloss, April 1917), at Kota Tinggi, Johore (V. Knight, Aug. 1917), and in Gilstead Road, Singapore (V. Knight, October 1918). Readily recognized by the black tips to its flavo-testaceous tegmina.

The specimen figured is that from Kota Tinggi.

### **Hemithyrsocera lateralis** Walker. (Plate XII, fig. 2.)

*Hemithyrsocera lateralis* Hanitsch, J., S.B., R.A.S., No. 69, p. 28 (1915).

To the localities previously recorded can now be added Rawang, Selangor (C. B. Kloss), and Gunong Kledang, Perak, where I took it in November 1916. The latter specimen is the one figured.

### **Hemithyrsocera palliata** Fabricius. (Plate XII, fig. 3.)

*Hemithyrsocera palliata* Hanitsch. J., S.B., R.A.S., No. 69, p. 28 (1915).

So far recorded from India, China, Indo-China, Lower Siam and Sumatra only.—However, the Oxford Museum contains two specimens from Selangor (H. C. Pratt, 1907), and one from Ceylon (E. E. Green). I took it on Bukit Kutu, Selangor, April 1915, and at Gurun, Kedah, December 1915.

The specimen figured is that from Bukit Kutu.

**Hemithyrlocera r'idleyi** Shelford.

*Hemithyrlocera r'idleyi* Shelf. Trans. Ent. Soc., London, 1912,  
p. 60, pl. LXXX., fig. 15.

Shelford: ♂. Flavo-testaceous. Antennæ setaceous, testaceous; eyes widely separated on vertex of head. Pronotum widely trapezoidal, margins hyaline. Tegmina and wings exceeding the apex of the abdomen. Tegmina with 19 costals, radial vein bifurcate from the middle, anterior ulnar bifurcate, 7 discoidal sectors. Wings hyaline, mediastinal vein 4-ramose, 16 costals slightly incrassated, radial bifurcate from the middle, medio-discal area about  $2\frac{1}{2}$  times broader than medio-ulnar, ulnar vein simple, discal area crossed by numerous transverse venules, triangular apical area moderate, distinct. Abdomen above banded with fuscous, no scent-gland visible, supra-anal lamina shortly triangular, apex sub-truncate. Subgenital lamina extremely asymmetrical, on the extreme left a blunt curved process, on the inner side of this another blunt process tufted with stiff brown hairs, the rounded apex of the lamina fimbriate, the left style small, situated to the right of the apex, the right style a large sinuose structure. In addition there appear under the supra-anal lamina a pair of bifurcate denticulate processes which apparently are not connected with the gonapophyses. Cerci 12-jointed, of moderate lengths, apex acuminate. Femora very strongly armed (front femora missing).

Total length 13 mm.; length of body 12 mm.; length of tegmina 12 mm.; pronotum  $3 \times 4$  mm.

*Hab*: Singapore, Botanic Gardens (H. N. Ridley, 1908) (Oxford Museum, type).

The complicated nature of the secondary sexual apparatus of this species is highly remarkable.

**Hemithyrlocera soror** Brunner von Wattenwyl.

*Hemithyrlocera soror* Hanitsch. J., S.B., R.A.S., No. 69, p. 29 (1915).

Previously recorded from Celebes and Java only. Since taken by N. Annandale on Taiping Hill, Perak, December 1915.

**Anaplecta vittata** n. sp.

♀. Head orange, antennæ black, filiform. Pronotum orange, its lateral margins hyaline. Tegmina black, with a broad white vitta across their middle; mediastinal field hyaline. Wings



with the marginal field and apical area fuscous; apical area two-fifths of the total wing length, its basal margin obtusely

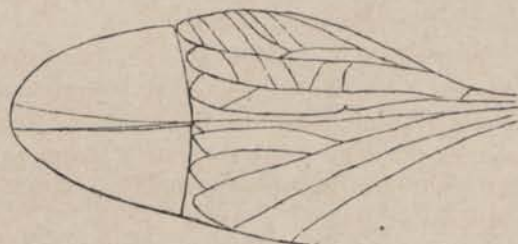


Fig 1. *Anaplecta vittata* n.sp. ♀  
Left wing,  $\times 10$ .

angled; six costal veins; medio-discal area crossed by five roughly equidistant venulæ, the distance between the 3rd and 4th being greatest; 1st axillary vein 3-ramose.

♀. Total length 5 mm; tegmina 4 mm.

*Hab*: Near Impounding Reservoir, Thomson Road, Singapore. Two examples ♀♀. (August 7th, 1922 and December 3rd, 1922). Type in the Oxford Museum.

The white vitta across its tegmina readily distinguishes it from the other Malayan species.

### Sub-family 2. PHYLLODROMIINÆ.

#### *Pseudothyrrocera scutigera* Walker.

*Pseudothyrrocera scutigera* Hanitsch. J., S.B., R.A.S., No. 69, p. 34 (1915).

The Oxford Museum contains, besides the type, collected by Wallace in Sarawak, two specimens from Kuching, Sarawak, presented by R. Shelford, 1899-1900. I took it at the Semangko Pass, Malay Peninsula, 2,700', March 1912, and on Gunong Kledang, Perak, 2646', November 1916.

As the abdomen of the type is missing, I give the measurements of one of Shelford's specimens (♂) from Sarawak:

♂: Total length 12 mm.; body 9 mm.; pronotum  $2.5 \times 3$  mm.; tegmina 9 mm.

The black mark on the pronotum is generally roughly hexagonal, the anterior angle being more acute than the posterior.

**Ischnoptera cavernicola** Shelford

*Ischnoptera cavernicola* Hanitsch. J., S.B., R.A.S., No. 69, p. 38 (1915).

Shelford's description was based upon a single ♂, from a cave at Bidi, Sarawak. Two ♀♀ examp'les, from a cave at Jibong, Sarawak (J. C. Moulton, January 26th, 1912), which Dr. Eric Mjöberg has sent me, differ in size and colouring slightly from the type in the Oxford Museum, but these differences are probably merely sexual.

♀: Head black, mouth parts and antennæ testaceous. Pronotum orange, with a black margin all round, widest at the sides, narrowest in front. Tegmina testaceous. Legs proximally testaceous, distally darker.

♀: Total length 15 mm.; body 13.5 mm.; pronotum 3.5 × 4 mm.; tegmina 11.5 mm.

**Ischnoptera indica** Brunner von Wattenwyl.

*Ischnoptera indica* Brunner. Nouv. Syst. Blatt. p. 130 (1865).

*Ischnoptera indica* Kirby. Syn. Cat. Orth., Vol. I., p. 81 (1904).

*Ischnoptera indica* Shelf. Gen. Ins. fasc. 73, p. 7 (1908).

Brunner: Fulvo-ferruginea. Capite magno. Pronoto latere deflexo. Alarum parte anticâ, præcipue campo infra-medio, latâ. Venâ scapu'ari dichotomâ. ♂.

Long. ♂: corporis 15.5 mm.; pronoti 3.5 mm.; pron. transv. 5 mm.; elytrorum 15.5 mm.

Cette espèce tient milieu entre la précédente [i.e. *I. himalayica* Brunner] et la suivante [i.e. *I. brasiliensis* Brunner]. Elle diffère de l'une et de l'autre par la largeur de la partie antérieure de l'aile et par sa nervation. La nervure scapulaire se bifurque au milieu, le rameau inférieur se bifurque encore deux fois, de sorte qu'il atte'nt le bord par 4 branches. La nervure inframédiane émet 5 rameaux vers le bord apical et 5 vers a nervure divisante. La première nervure axillaire se bifurque une première fois au premier tiers une seconde fois au milieu, et une troisième fois un peu p'us oin. Le second rameau se bifurque de nouveau, de sorte que cette nervure arrive au bord par 5 branches.

Patrie: Malacca (Coll. Fieber).

**Ischnoptera reversa** Walker.

*Ischnoptera reversa* Hanitsch. J., S.B., R.A.S., No. 69, p. 37 (1915).

Hitherto known only from the type ♂, in the Oxford

Museum, taken by Wallace at Singapore.\* I took a ♂ on Bukit Kutu, Selangor, 3457', April 1915. Its measurements agree closely with those given by Shelford in his revised description (T.E.S., 1906, p. 489), viz :

♂: Total length 19 mm.; body 13 mm.; pronotum  $3.2 \times 4.9$  mm.; tegmina 15 mm.

**Phyllodromia abrupta** n. sp.

♀. Head orange; eyes black; antennæ testaceous. Pronotum dull orange, with a broad lateral border of pale

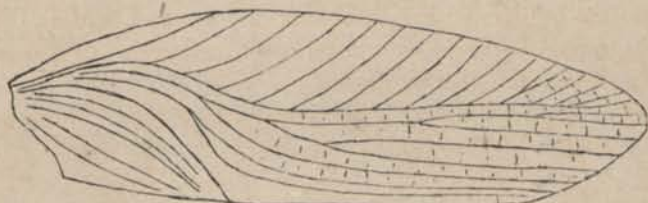


Fig. 2. *Phyllodromia abrupta* n.sp. ♀  
Right tegmen.  $\times 7$ .

straw yellow. Tegmina greatly exceeding the body; mediasutinal area, and the anterior half, or more, of the marginal area, very pale straw yellow, abruptly succeeded by a light chestnut streak which follows the radial vein and then shades off into a

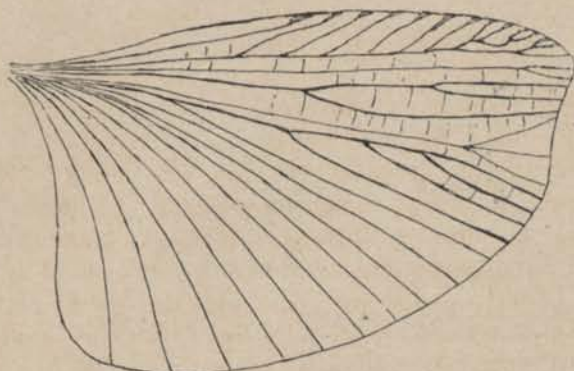


Fig. 3. *Phyllodromia abrupta* n.sp. ♀  
Right wing.  $\times 7$ .

transparent amber colour along the posterior margin; 14 costals. Wings dark fuscous, 13 costals, ulnar vein bifurcate, triangular apical field present. Cerci very long.

\* The locality "N.W. Borneo (Oxford Museum)," given in my former paper, was an error.

♀. Total length 14.5 mm.; body 9 mm.; pronotum 2.7 × 4 mm; tegmina 13 mm.

*Hab*: Ginting Bidei, Selangor, 2000' (C. Boden Kloss, April 1917). Three examples (♀♀). Type in the Oxford Museum.

**Phyllodromia adversa** Saussure and Zehntner.

*Blatta adversa*, S. and Z., in Grandidier, Hist. Nat. Madagascar, Orth. Vol. I., p. 33, pl. I., fig. 9 (1895).

*Phyllodromia adversa* Kirby. Syn. Cat. Orth. Vol. I., p. 91 (1904).

*Phyllodromia adversa* Shelf. Gen. Ins., fasc. 73, p. 14 (1908).

Saussure and Zehntner: Testacea, *Bl. lacrymulæ* picturâ simillima. Antennæ fuscæ, articulis 1, 2 testaceis. Caput flavo-testaceum vel rufescens, oculis, invicem valde remotis. Pronotum ut in *Bl. lacrymula* nigro-bivittatum, sed margine postico fusco, haud luteo-limbato. Elytra castanea, margine costali anguste flavido. Alæ nebulosæ, venis fuscis, areâ membranaceâ intercalatâ elongatâ, margine apicali arcuato, haud sinuato. Campus anterior angustus, *venis longitudinalibus ante medium valde retro-curvatis*. Campus marginalis rufo-castaneus, margine subtus angustissime flavido, venis costalibus longioribus, crassiusculis; vena mediastina 3-ramosa. Venulæ transversæ areæ medioidiscoidalis crassiusculæ; vena ulnaris 4-ramosa. Pedes immaculati, tibiis ad spinas punctis minutis fuscis. Femora anteriora ad typum 2<sup>m</sup> pertinentes. Abdomen supra fusco-umbratum, marginibus anguste testaceis; segmentorum posticorum angulis retro-productis. Cerci testacei. Ultimum segmentum ventrale ♀ rotundatum. Lamina supraanalis ♀ transverse rotundata, ♂ tranverse trigonali-trapezina, truncata vel incisa. Lamina infragenitalis stylis 2 obtusis brevissimis in medio instructa.

Var. Pronoti margo posterior obsolete anguste testaceus.

Longueur du corps, ♀ 16.25 mm.; ♂ 14.5 mm.

Longueur de l'elytre, ♀ 15 mm.; ♂ 13.75 mm.

Longueur du pronotum, ♀ 4 mm.; ♂ 3.5 mm.

Largeur du pronotum, ♀ 5 mm.; ♂ 4.75 mm.

*Hab*: Java (Musée de Genève); C. Pictet et M. Bedot.—Ressemble par sa livrée à l'*Hemithyrsocera lateralis* Serv.

**Phyllodromia amplexens** Walker.

*Blatta amplexens* Walker. Cat. Blatt. B. M. p. 223 (1868).

*Phyllodromia amplexens* Kirby. Syn. Cat. Orth., Vol. I., p. 93 (1904).

*Phyllodromia amplexens* Shelf. Gen. Ins., fasc. 73, p. 14 (1908).

Walker: Pallide lutea, fusiformis; caput prothoracem perpaullo superans; oculi invicem approximati; antennæ piceæ, basi pallide testaceæ; prothorax longiusculus, vittis duabus fasciaque postica nigris connexis, lateribus subrotundatis subreflexis, margine postico rotundato; pedes robusti; alæ anticæ semicoriaceæ, apud costam fere hyalinæ, abdomen superantes; alæ posticæ nigricantes, apices versus cinereæ.



Fig 4. *Phyllodromia amplexens* Walker. ♂  
Left tegmen.  $\times 7$ .

Pale luteous, fusiform, smooth, shining. Head extending very little beyond the prothorax. Eyes tawny, approximate to each other. Antennæ piceous, pale testaceous at the base. Prothorax very much longer than half its breadth, with two black irregular abbreviated stripes, which slightly diverge from each other hindward, and are connected with an abbreviated black band near the hind border; fore border slightly truncated; sides slightly rounded and reflexed, widening towards the hind border, which is rounded. Legs stout;

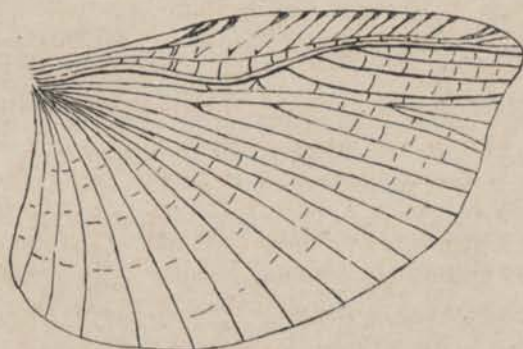


Fig. 5. *Phyllodromia amplexens* Walker. ♂  
Right wing.  $\times 7$ .

spines long. Wings extending beyond the abdomen. Fore wings semicoriaceous, nearly hyaline along the costa; intermediate veins distinct; transverse sectors regular. Hind

wings blackish, cinereous towards the tips. Length of the body 5 lines ; of the wings 12 lines.

It has some resemblance to the genus *Epilampra*. Morty. In Mr. Saunders' collection.

The type, collected by Wallace on Morty Island (N.E. of Gilolo), is in the Oxford Museum. Its sex cannot be determined, as the abdomen is missing. I took this species on three occasions within the Malayan region, viz :

1♂, Gunong Kledang, Perak, 2646' (November 1916).

1♂, Penang Hill, 1500'-2423' (May 1917).

1♂, Gunong Angsi, Negri Sembilan, 2000'-2790' (April 1918).

The horse-shoe shaped marking on the pronotum, shining black upon orange, is very distinct in all three specimens, as in the type. Distinct is also the apical triangle of the wings, a fact not mentioned by Walker. The dimensions of the Penang specimen are :

♂: Total length 13 mm. ; body 10.5 mm. ; pronotum  $3 \times 4$  mm. ; tegmina 11 mm.

A resemblance to *Epilampra*, mentioned by Walker, is not obvious, not even superficially.

#### **Phyllodromia castanea** Brunner von Wattenwyl.

*Phyllodromia castanea* Brunner. Abh. Senck. Ges., Vol. XXIV., p. 204, pl. XVI., fig. 7 (1898).

*Phyllodromia castanea* Kirby. Syn. Cat. Orth. Vol. I., p. 93 (1904).

*Phyllodromia castanea* Shelf. Gen. Ins., fasc. 73, p. 13 (1908).

Brunner : Castanea. Vertex liber, cum fronte ferrugineus. Pronotum elongatum, lateribus pallide marginatis. Elytra campo marginali testaceo. Alæ parum infumatae, vena ulnari 4-ramosa. Pedes cum abdomine ferruginei. ♂.

♂ Long. corp. 11 mm. ; long. pron. 3 mm. ; lat. pron. 3.3 mm. ; long. elytr. 10.5 mm.

Patria : Brunei in ins. Borneo (collectio mea).

#### **Phyllodromia contingens** Walker.

*Phyllodromia contingens* Hanitsch. J., S.B., R.A.S., No. 69, p. 45 (1915) ; Treubia, Vol. III., p. 198 (1923).

The Oxford Museum contains Walker's types of his *Blatta contingens*, ♀, from Sarawak, and of the synonymous *Blatta humeralis* ♂, from Singapore, both collected by Wallace ; also specimens from Kuching, Sarawak, taken by Shelford.

I have recorded this species from Java and Krakatau (Dammerman, 1919 and 1920). See "Treubia" (l.c.).

**Phyllodromia curvinervis** Saussure and Zehntner.

*Blatta curvinervis* S. and Z., in Grandidier, Hist. Nat. Madag.,  
Orth. Vol. I., p. 32 (1895).

*Phyllodromia curvinervis* Kirby. Syn. Cat. Orth., Vol. I., p. 91  
(1904).

*Phyllodromia curvinervis* Shelf. Gen. Ins. fasc. 73, p. 13 (1908).

Saussure and Zehntner: *Bl. lacrymulæ* simillima, subtus testacea. Antennæ brunneæ. Frons inter oculos nigra. Pronotum nigrum, marginibus lateralibus latius, anteriore anguste, flavis; posteriore angustissime rufescente; vitta media flava disci totâ longitudine perducta, biconstricta, antice angustata. Elytra rufo-castanea, apice pallida, margine costali fere toto pellucenti-testaceo, lineâ humerâ fusciora. Alæ subhyalinæ, venis brunneis; campo anteriore angustissimo, venis rufis, apice coarctato; campo marginali fulvo-brunneo, subtus lutescente, haud opaco, venis costalibus crassis 13. Vena discoidalis ante medium furcata; *venæ media et ulnaris arcuatæ*, hæc angustissime biramosa; area intercalata sat longa, margine apicali arcuato, leviter prominulo, quâ de causâ sinus apicalis nullus. Rami venæ axillaris invicem propinqui; omnes anguste radiati. Coxæ basi, femora basi et apice, fusco-notata; tibiæ ad spinas fusco-punctatæ. Femora anteriora subtus margine anteriore totâ longitudine spinosa (spinis 12-13). Abdomen supra piceum, fusco-varium, subtus apice fusco-marmoratum. Cerci testacei, vel fusci. Lamina supra-analis grandis, plana, ♀ apice trapezino-rotundata, ♂ major, trigonalis; apice rotundata vel obtusa, laminam infragenitalem haud superans. Lamina infragenitalis rotundata, irregularis; stylo sinistro crasso vel crassissimo, dextro longo, gracillimo, acuto. Ultimum segmentum ventrale ♀ apice foveolatum, subincisum.

Longueur du corps ♂ 10 mm.; longueur du pronotum  
♂ 3 mm.

Longueur de l'elytre 12.75 mm.; largeur du pronotum  
3.5 mm.

*Hab*: Java.—Birmania.

Suivant M. Brunner de Wattenwyl, la veine ulnaire de l'aile serait seulement bifurquée; cela peut varier.

Cette espèce est remarquable par l'étroitesse du champ antérieur de ses ailes, rétréci au bout par le champ intercalé; et par les nervures longitudinales de ce champ, qui sont courbées en avant, à connexité tournée en arrière, avec l'extrémité et la base légèrement infléchies en sens inverse."

**Phyllodromia diagrammatica** Hanitsch.

*Phyllodromia diagrammatica* Hanitsch. Treubia, Vol. III., part 2, pp. 198-200, fig. 1 (1923).

♂. Head free. Vertex red; eyes, clypeus, labrum and mouth parts generally, black. Antennæ setaceous. Pronotum black, with a narrow white border all round; near its centre two white comma-like markings, each of which is enclosed in front by a white hook-like line.



Fig. 6. *Phyllodromia diagrammatica* Hanitsch. ♂ × 7.

Tegmina black at the base, turning greyish-brown towards the tips, with all the veins chalk-white, clearly standing out against the dark background. Radial vein with 12 costal veins, the first eight simple, the 9th bifurcated, the 10th trifurcated, the 11th and 12th simple. Ulnar vein sending 7 branches towards the sutural margin, of which the 4th and 5th are bifurcated, the others simple. Anal area with 5 axillary veins. Wings transparent, with the anterior margin infuscated. Mediastinal vein simple, proximally fused with the radial vein. Radial vein bifurcated, with 3 or 4 anastomoses between the two branches; outer branch with 4 or 5 costals; inner branch with 10 to 12 costals which may arise singly, or multiramous, i.e. 3 to 5 branches from a common trunk. Costals all incrassated. Median vein simple or bifurcated. Ulnar vein sending 3 or 4 branches to the apex only, of which the last branch is bifurcated, the others simple; apex of ulnar vein bifurcated. Small apical field. First axillary vein 4-ramose. Front femora armed with about 3 stout spines, succeeded distally by a close-set row of minute piliform spines, the proximal portion of the front femora being almost free of spines.

Total length 12 mm.; body 8.5 mm.; pronotum 2.5 × 3.7 mm.; tegmina 10 mm.



*Hab*: Two examples ♂♂ Kuala Lumpur, Selangor (C. Boden Kloss, January and February, 1918). Type in the Oxford Museum.—One example, ♂, Selitar, Singapore (F. Monteiro, February 1918).—One example, ♀, without locality label (Buitenzorg Museum).

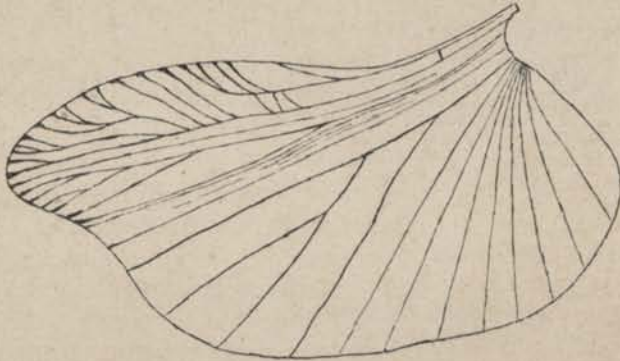


Fig. 7. *Phyllodromia diagrammatica* Hanitsch. ♂  
Left wing.  $\times 7$ .

In the specimen examined and figured, right and left wing differ in their venation. The first 4 costals of the left wing spring from the outer branch of the radial; these are followed by 3 costals arising singly from the inner branch of

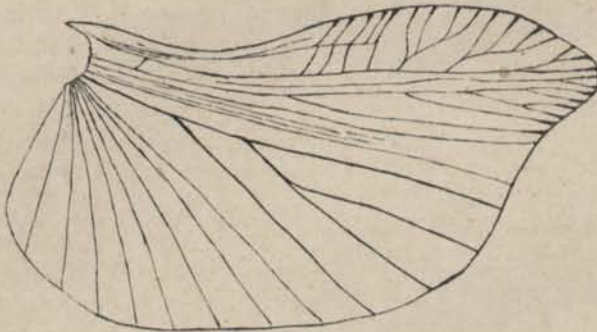


Fig. 8. *Phyllodromia diagrammatica* Hanitsch. ♂  
Right wing.  $\times 7$ .

the radial, then by 5 costals from a common trunk, and finally by 3 costals, also from one trunk. In the right wing we find 5 costals arising from the outer radial, followed by three groups of 4, again 4, and 2 costals respectively, springing in common trunks from the inner radial. Still more curious is that the median vein of the left wing is simple, that of the right wing

bifurcated. Considering that e.g. a forked median vein is one of the characters of *Ellipsoidion* Saussure (= *Apolyta* Brunner) to distinguish it from allied genera with simple veins, it shows with what caution such-like differences must be employed for generic distinction. Finally the ulnar vein of the left wing gives off 5 branches, of which the fourth is bifurcated, the others simple; the right ulnar has 4 branches of which the third is bifurcated, the others simple.

The armature of the front femora conforms with Shelford's type "B," in his "Preliminary Diagnoses of some new genera of Blattidæ"\* where he proposes to split up *Phyllodromia* Serville into six genera. This, together with the ramose character of the ulnar vein of the wings and the only slight development of the apical triangle, would bring this species under the genus *Eoblatta* Shelford, of which *Blatta notulata* Stal is the type.

**Phyllodromia hamifera** Walker.

*Phyllodromia hamifera* Hanitsch. J., S.B., R.A.S., No. 69, p. 43, pl. III., fig. 14 (1915).

Originally recorded from Sarawak. Since taken by myself on Pulo Rawi, Lower Siam, April 1911, and on Penang Hill, May 1917.

**Phyllodromia laterifera** Walker.

*Phyllodromia laterifera* Hanitsch. J., S.B., R.A.S., No. 69, p. 48 (1915).

Hitherto only known from Sarawak. The Oxford Museum contains, besides the type ♀, collected by Wallace, also a ♂, from Kuching (1900), presented by the Sarawak Museum.



Fig. 9. *Phyllodromia laterifera* Walker. ♂  
Left tegmen. × 5.

Since taken by Professor C. F. Baker on Singapore island, 1♂, and at Penang, 1♀, both in 1917.

Re-description of the species from the Singapore specimen :

\* Entom. Month. Mag. (2), Vol. XXII., pp. 154-156 (1911).

♂. Head testaceous, not covered by the pronotum. (Antennæ missing.) Pronotum circular to elliptical, its greatest width behind the middle; whitish transparent, with a few green markings; disk testaceous. Tegmina large and broad, not overlapping considerably, much exceeding the apex of the abdomen; whitish transparent, with some of the costals green; about 15 costal veins; ulnar vein sending 8 branches to the dividing vein. Wings without apical triangle ulnar vein sending 5 branches to the apex. Femora, especially the hind ones, weakly armed beneath. Aroia present. Supra-anal lamina (♂) narrow, transverse. Cerci long, 10-jointed, the apical joint green, the rest light testaceous. Two styles, both shifted to the left side, reddish.

♂: Total length 18.5 mm.; body 13 mm.; pronotum 4 × 5 mm; tegmina 15 mm.

*Hab*: Sarawak (Wallace); Singapore (C. F. Baker); Penang (C. F. Baker.)

This species has a curious superficial resemblance to *Panchlora nivea* L., from South America, due to its transparent white tegmina and the green infiltrations along some of the costals. Traces of green are also found along the border of the pronotum, on the distal end of the femora, in the last tarsal joints of the middle and hind legs, and in the apical joints of the cerci.

***Phyllodromia latius vittata* Brunner von Wattenwyl.**

*Phyllodromia latius vittata* Hanitsch, J., S.B., R.A.S., No. 69, p. 42 (1915); *Treubia*, Vol. III., p. 198 (1923).

This species had first been recorded from Buitenzorg, Java, where Dr. Karny found it again in 1920. Prof. C. F. Baker took it on Singapore island in 1917, and the Oxford Museum contains a specimen from Macassar, presented by Dr. Malcolm Burr.

Pronotum orange, with a large U-shaped mark, restricting the orange coloration to a narrow border in front and at the sides of the pronotum and to the space between the two limbs of the U. Tegmina dark fuscous to black, with a light outer border.

***Phyllodromia luteo-marginata* n.sp.**

♂. Broad, somewhat convex. Head not covered by the pronotum, testaceous, vertex darker, eyes testaceous, close together, separated by only the thickness of the antennæ; antennæ filiform, testaceous, darker distally. Pronotum dark

chestnut to black, laterally with a yellowish border, broader behind than in front. Tegmina transparent chestnut, with a yellowish border comprising the entire mediastinal area and



Fig. 10. *Phyllodromia luteo-marginata* n.sp. ♂  
Right tegmen.  $\times 4$ .

not quite one-half of the radial area, fading away distally; 13 costal veins, the 10th subdivided into two, the 11th and 12th into four each; discoidal area with 5 longitudinal sectors. Wings with marginal area slightly

yellowish, 10 costal veins, the 7th to 10th bifurcated; ulnar veins with 6 branches; no apical area.

♂: Total length 18.5 mm.; body 14 mm.; pronotum 4.5  $\times$  6 mm.; tegmina 15 mm.

*Hab*: Botanic Gardens, Singapore. One example, ♂. (H. N. Ridley, April–September 1906). Type in the Oxford Museum.

A ♀ example which I took at Gurun, Kedah, Malay Peninsula (December 1915) and which apparently belongs to the same species, measures:

♀: Total length 17 mm.; body 13.5 mm.; pronotum 4  $\times$  5.5 mm.; tegmina 13.5 mm.

It agrees with the ♂ in all respects, except that its eyes are further apart, being separated by twice to three times the thickness of the antennæ.

### ***Phyllodromia molesta* Brunner von Wattenwyl.**

*Phyllodromia molesta* Brunner. Abh. Senck. Ges. Vol. XXIV, p. 203, pl. XVI, fig 5 (1898).

*Phyllodromia molesta* Kirby. Syn. Cat. Orth. Vol. I., p. 92 (1904).

*Phyllodromia molesta* Shelf. Gen. Ins. fasc. 73, p. 14 (1908).

Brunner: Picea. Vertex liber, cum fronte niger, lineâ transversâ testaceâ inter oculos ornatus. Pronotum rotundatum, nigrum, utrinque late testaceo-marginatum, disco rotundato delineato. Elytra picea, campo marginali testaceo. Alæ valde infumatæ, venâ ulnari triramosâ. Femora nigra. Tibiæ cum tarsis ferrugineæ. Abdomen nigrum. ♂ ♀.

	♂	♀
long. corp.	9.5 mm.	10.5 mm.
long. pron.	2.8 ..	3.2 ..
lat. pron.	4.0 ..	4.5 ..
long. elytr.	10.2 ..	8.0 ..

*Patria*: Palabuan in ins. Java (collectio mea).

**Phyllodromia nigrocincta** Chopard.

*Phyllodromia nigrocincta* Chopard. Mem. Asiat. Soc. Bengal, Vol. VI., p. 343, pl. XII., figs. 1-3 (1919).

Chopard: [Much abbreviated] "Espèce de taille moyenne, très allongée de forme, jaune testacé, à pronotum plus foncé bordé tout autour d'une assez large bande noire; pattes et antennes concolores. Pubescence presque nulle.

Pronotum large, de couleur testacé roussâtre avec une bordure presque noire, irrégulière, très large sur les côtés, étroite en avant et en arrière; surface déprimée, marquée d'une ponctuation très écartée, à pubescence rare; bords finement rebordés, le bord antérieur très largement arrondi, bord postérieur sinué; angles postérieurs arrondis.—Elytres très étroits, plus longs que l'abdomen, jaune testacé dans la moitié antérieure, transparents vers le bord interne; bord antérieur convexe près de la base, presque droit, ensuite jusqu'à l'extrémité; bord interne presque droit, apex arrondi. Veine discoïdale plus marquée que les autres, située presque au milieu de l'élytre, divisée vers sa moitié, le rameau inférieur deux fois redivisé, le tronçon basal et le rameau supérieur portant environ 18 branches assez régulières et un peu sinuées; veine médiane bifurquée très près de la base et portant 5 à 6 rameaux parallèles entre eux, très allongés. . . . Champ anal étroit et allongé, présentant 6 nervures parallèles, à intervalles lisses.—Ailes très larges, transparentes sauf vers l'extrémité du bord antérieur qui est jaunâtre; champ antérieur étroit, échancrure anale peu marquée. Veine médiastine à 2 ou 3 rameaux; médiane à 9-10 rameaux dont quelques-uns divisés; ulnaire antérieure simple; ulnaire postérieure bifurquée vers le tiers apical et portant, dans la partie basale, 4 rameaux incurvés, le dernier atteignant le bord externe; champ apical très faiblement mais visiblement marqué; champ postérieur présentant une dizaine de nervures dont la 1<sup>re</sup> quatre fois divisée. Nervules assez peu marquées et espacées.

Total length 17.5 mm.; pronotum 3.5 mm.; tegmina 13.5 mm.

*Hab*: Goah Glap, Bukit Tapang, Biserat, Jalor. (N. Annandale, February 1916); on the walls of the inner cavern of cave. 3♀♀.—Annandale (loc. cit. p. 343) adds in a footnote: "This is the cavern I described in Ent. Records, XII., p. 75 (1900). Its walls were covered in places with *Phyllodromia nigrocincta*, *Periplaneta cavernicola* and *Chelisoches morio* [Dermaptera],

the *Periplaneta* being particularly abundant, while the floor, chiefly composed of bat's guano, literally heaved with *Leucophaea striata*."

**Phyllodromia nimbata** Shelford.

*Phyllodromia nimbata* Hanitsch. J., S.B., R.A.S., No. 69, p. 57 (1915).

To the previous record from Sarawak can now be added Singapore where the Hon. C. J. Saunders took a ♂ specimen in June 1922.

**Phyllodromia nitens** Brunner von Wattenwyl.

*Phyllodromia nitens* Brunner. Abh. Senck. Ges., Vol. XXIV, p. 204, pl. XVI, fig. 6 (1898).

*Phyllodromia nitens* Kirby. Syn. Cat. Orth. Vol. I., p. 93 (1904).

*Phyllodromia nitens* Shelf. Gen. Ins. fasc. 73, p. 13 (1908).

Brunner: Staturâ minore. Vertex liber, niger. Frons fusco-ferruginea. Pronotum valde transversum, nigrum, margine toto flavo—albido, disco nigro, utrinque postice emarginato-delineato. Elytra picea, basi in campo marginali pallide maculata. Alæ infumatae, venâ ulnari 5-ramosâ. Femora nigra. Tibiæ ferrugineæ. Abdomen totum nigrum. ♀."

♀. Long. corp. 9 mm.; long. pron. 2.8 mm.; lat. pron. 4 mm.; long. elytr. 10 mm.

Patria: Brunei in ins. Borneo (collectio mea).

**Phyllodromia nodosa** Fritze.

*Blatta nodosa* Fritze. Rev. Suisse Zool. Vol. VIII., p. 335 (1899).

*Phyllodromia nodosa* Kirby. Syn. Cat. Orth. Vol. I., p. 91 (1904).

*Phyllodromia nodosa* Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Fritze: ♂. Majuscula, pallide testacea. Caput nigrum, ore, vittâ transversâ supra-antennali et occipite flavo-testaceis. Antennæ testaceæ vel brunneo-annulatae, articulis 3-13 infuscatis. Oculi remoti. Pronotum ellipticum, disco fulvo, marginibus late hyalinis. Elytra leviter fulvescentia, elongata, subhyalina, basi lineâ humerali brevi fuscâ; dimidiâ parte apicali in venis punctis nodosis fuscis, saltem in elytro sinistro conspersa. Alæ angustæ vitreæ, venis testaceis; campo anteriore mediocri, posteriorem valde superante, valde reticulato; venâ discoidali apice furcatâ, venis costalibus vix incrassatis; venâ ulnari 5-6 ramosâ. Pedes testacei; tibiis supra ad spinas fusco-maculatis; femoribus anterioribus

marginè postico ultra medium spinis 3. Abdomen fusco-testaceum. Lamina supra-analis transversa, brevissima, nonnunquam in medio rotundato-producta. Cerci longissimi, articulis valde sejunctis, articulis 7 et sequentibus elongatis. Ultimùm segmentum ventrale valde sinuatum. Lamina infragenitalis profunde fissa et incisa, bilobata, stylis brevibus 2 apicalibus.

Long. corp. 13 ; pronot. 3 ; latit. 4·8 ; elytr. 16 mm.

*Hab* : Java.

***Phyllodromia notulata* Stal.**

*Phyllodromia notulata* Hanitsch. J., S.B., R.A.S., No. 69 (1915), p. 49, pl. I, fig. 2 ; *Treubia*, Vol. III., p. 198 (1923).

*Eoblatta notulata* Hebard. Occ. Papers, Bernice Pauahi Bishop Museum, Vol. VII, p. 329, pl. XXVI, fig. 11 (1922).

To the previous localities can now be added Penang Hill where I took it in May 1917, Cochs Keeling Island, recorded by Kirby\* (P. Z. S., 1909, p. 156), and Hawaii (Hebard, l.c.).

***Phyllodromia polygrapha* Walker.**

*Phyllodromia polygrapha* Hanitsch. J., S.B., R.A.S., No. 69, p. 49 (1915).

Represented in the Oxford Museum by the type (♀), from Chantibon, Siam (Mouhot), and by another ♀ example from Kuching, Sarawak (July 1900). A ♂ specimen, which I took at Gurun, Kedah, Malay Peninsula (December 1915), is somewhat larger than the ♀, viz. :

	Total length.	Body.	Pronotum.	Tegmina.
♀ (Siam)	14 mm.	(missing)	3·5 × 4·5 mm.	11 mm.
♀ (Sarawak)	15·5 „	12·8 mm.	4 × 5·2 „	12·5 „
♂ (Kedah)	18 „	13 „	3·8 × 5 „	15 „

The specimens from Sarawak and Kedah both show a broad vertical, castaneous streak on the front of the head, from between the eyes to the base of the labrum. This is absent in the type.

***Phyllodromia rectangulariter-vittata* Brunner von Wattenwyl.**

*Phyllodromia rectangulariter-vittata* Brunner. Abh. Senck. Ges. Vol. XXIV., p. 203, pl. XVI, fig. 3 (1898).

*Phyllodromia rectangulariter-vittata* Kirby. Syn. Cat. Orth. Vol. I., p. 91 (1904).

*Phyllodromia rectangulariter-vittata* Shelf. Gen. Ins. fasc. 73, p. 13 (1908).

\* Under the name of *Allacta noctulata*, an obvious misprint.

Brunner: "Statura minore. Vertex liber, piceus, nitidus. Frons castanea. Pronotum nigrum, marginibus antico et lateralibus luteis, vitta mediana lutea rectangulari, a margine antico et margine postico remota. Elytra picea, campo marginali testaceo. Alæ infumatae, vena ulnari biramosa. Pedes cum abdomine testacei. ♀.

♀ Long. corporis 10 mm.; pron. 3.8 mm.; lat. pron. 4 mm.; long. elytr. 10.5 mm.

Patria: Borneo (collectio mea).

The Oxford Museum has four examples (♂♂) of this species, from Kuching, Sarawak, presented by R. Shelford in 1899 and 1900.

**Phyllodromia rubro-nigra** n. sp.

♂ and ♀. Shape long and narrow. Head orange red, shining; antennæ (♂) orange, base and tip black; (antennæ ♀ missing).

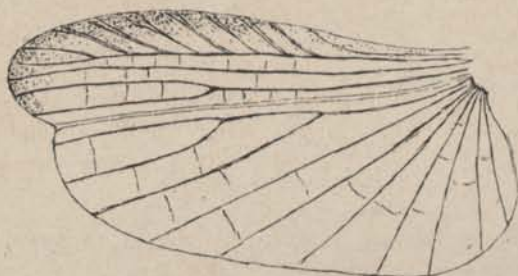


Fig. 11. *Phyllodromia rubro-nigra* n.sp. ♂  
Left wing. × 7.

of the ♀ small, almost rectangular, of the ♀ large, parabolic. Tegmina a much exceeding the body, dark chestnut, with a light anterior border. Wings fuscous; mediastinal area a darker; costals incassated; ulnar vein of the ♂ bifurcate, of the ♀ trifurcate.

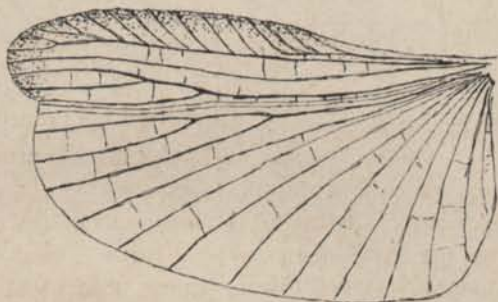


Fig. 12. *Phyllodromia rubro-nigra* n.sp. ♀  
Left wing. × 7.

Legs: ♂: coxæ and femora orange, tibiæ and tarsi black; ♀: entirely orange.

♂: Total length 12 mm.; pronotum 2.5 × 2.5 mm.; tegmina 10 mm.

♀: Total length 14 mm.; pronotum

4 × 4 mm.; tegmina 11 mm.



*Hab*: Gunong Angsi, Negri Sembilan, 2000'-2790'. (R. Hanitsch, April 1918). 1♂ and 1♀ example. Type in the Oxford Museum.

Notwithstanding the difference both in the shape and in the size of the pronotum, I regard the two specimens, ♂ and ♀, respectively, as belonging to the same species.

**Phyllodromia stellata** n.sp.

♀. Generally pale testaceous. Head and antennæ of the same colour, eyes dark brown. Pronotum almost circular, except for its posterior border which is straight; pale testaceous, disk darker, with black vermiculations. Tegmina semi-transparent, pale testaceous, with a large number of spots, just visible to the naked eye, but very distinct under low magnification, round and of brown colour, giving to the tegmina a quite characteristic appearance. Wings hyaline, eight costals, their apices clavately incrassated. (Remaining portion of wings missing).



Fig. 13. *Phyllodromia stellata* n.sp. ♀  
Left tegmen. × 5

♀. Total length 13 mm.; body 9 mm.; pronotum 3.6 × 3.1 mm.; tegmina 11 mm.

*Hab*: Gunong Kledang, Perak, 2646' (R. Hanitsch, November 1916). One example ♀. Type in the Oxford Museum.

**Phyllodromia subgenitalis** Fritze.

*Blatta subgenitalis* Fritz. Rev. Suisse Zool. Vol. VII., p. 336 (1899).

*Phyllodromia subgenitalis* Kirby. Syn. Cat. Orth., Vol. I, p. 92 (1904).

*Phyllodromia subgenitalis* Shelford. Gen. Ins. fasc. 73, p. 13 (1908).

Fritze: ♂ ♀. Sat minuta, gracilis, fulvo-testacea, subtus flavo-testacea. Frons maculâ transversâ fusco-rufâ. Pronotum marginibus lateralibus deflexis, testaceis, opacis, disco rufescente, obsolete rufo-maculoso. Elytra modice elongata. Alæ nebulosæ, venis fuscis, apice rotundatæ, margine costali fulvescente. Campus anterior angustus, fusi-formis, apice valde attenuatus, venis costalibus crassiusculis; venâ discoidali ante medium furcatâ, venâ ulnari arcuatâ,

ultra medium furcatâ. Campus apicalis intercalatus distinctissimus, acute trigonalis, venis longitudinalibus 2, margine apicali arcuato, leviter prominulo. Abdomen supra in medio infuscatum vel segmentis nigris, margine pallido. Lamina supra-analis ♂ ♀ trigonalis, carinata, apice minime incisa; cerci flavidi. Ultimum segmentum ventrale ♀ rotundatum; ♂ septimum segmentum dorsale in medio carinulâ arcuatâ et sulco notatum. Lamina supra-analis prominula; ultimum segmentum ventrale arcuato-excisum. Lamina infragenitalis subtrigonalis, in medio processu brevi rotundato; extus ad illum stylo sinistro; angulo dextro in processum longiorem, truncatum, apice posterius denticulatum, producto, ad basin illius sulcato-incisa. Titillatores 2 spiniformes.

Var. ♂. Lamina infragenitalis si mavis oblique late truncata, subsinuata, angulo apicali itaque ad latus sinistrum dejecta.

Var. Alæ vitreæ.

♂: Long. corpor. 9.5; elytr. 10.5 mm.

♀: Long. corpor. 10; elytr. 10 mm.

*Hab*: Deli (Sumatra).

#### **Phyllodromia terminalis** Brunner von Wattenwyl.

*Phyllodromia terminalis* Brunner. Abh. Senck. Ges., Vol. XXIV., p. 206, pl. XVI., fig. 11 (1898).

*Phyllodromia terminelis* Kirby. Syn. Cat. Orth. Vol. I., p. 93 (194).

*Phyllodromia terminalis* Shelf. Gen. Ins. fasc. 73, p. 13 (1908).

Brunner: Picea. Vertex obtectus. Pronotum magnum, transversum, postice truncatum, unicolor piceum. Elytra picea, apice pellucida. Alæ vix infumatae, vena ulnari 4-ramosa. Pedes cum abdomine nigri. ♀.

♀. Long. corp. 13 mm.; long. pron. 3.8 mm.; lat. pron. 5.5 mm.; long. elytr. 14 mm.

Patria: Borneo.

#### **Phyllodromia vilis** Brunner von Wattenwyl.

*Phyllodromia vilis* Brunner. Nouv. Syst. Blatt. p. 103 (1865).

*Phyllodromia vilis* Kirby. Syn. Cat. Orth. Vol. I., p. 92 (1904).

*Phyllodromia vilis* Shelf. Gen. Ins., fasc. 73, p. 13 (1908).

*Blattella vilis* Karny. Suppl. Ent. No. 4, p. 100 (1915).

Brunner: Parva, ferruginea. Pronoto semiorbiculari Alarum venâ inframediâ ramis principalibus duobus bifurcatis ♀.

Long. : ♀: corporis 10 mm.; pronoti 3.2 mm.; pron. transv. 4.7 mm.; elytrorum 10 mm.

Cette espèce diffère de la précédente [i.e. *P. ferruginea* Brunner] par sa taille, par la nervation des ailes et par la couleur uniforme de l'abdomen.

Les ailes sont un peu grisâtres, avec les nervures foncées. La nervure inframédiane émet un rameau à-peu-près de son milieu et un autre du second tiers. Ces deux rameaux sont les seuls qui partent de la nervure, mais l'un et l'autre se bifurquent avant d'atteindre le bord. La première nervure axillaire joint le bord par 4 branches.

L'unique individu, que j'ai devant moi et qui provient de la collection de M. Fieber, est mutilé.

Patrie : Malacca (Coll. Fieber).

Recorded by Karny from Formosa, viz. Teraso (1909), Taihanroku, Taihorin (1911), and Kankau (Koshun) (1912).

#### **Phyllodromia virescens** Walker.

*Phyllodromia virescens* Hanitsch. J., S.B., R.A.S., No. 69, p. 47 (1915).

So far described from Sarawak only. Since-taken by V. Knight at Tebing Tinggi, Kelantan, July 1920, the specimen (sex? abdomen missing) measuring :

Total length 9 mm.; pronotum 2 × 3 mm.; tegmina 7 mm.

#### Genus **LIOSILPHA** Stal.

Stål, Bih. Svensk. Akad. Vol. II (13), p. 10 (1874).

Shelford, Gen. Ins. fasc. 73, p. 16 (1908).

Shelford : "Broad, convex insects. Tegmina short, scarcely exceeding apex of abdomen, their venation often obsolete in the anal and discoidal fields, marginal field broad. Wings with a minute apical triangle or none, ulnar vein multi-ramose. Femora strongly armed. Subgenital lamina of male with large, asymmetrical and strongly chitinised styles."

So far recorded from Brazil, Africa (Congo, Gaboon and Madagascar) and Japan only, but apparently represented by several species in the Malayan region and in Ceylon.

**Liosilpha lata** n.sp.

♂ and ♀. Broad, convex, pale straw-coloured, shining. Head testaceous, vertex reddish; antennæ filiform, testaceous, the distal portion of each joint black. Disk of the pronotum clouded orange and brown, with a number of black dots; sides of the pronotum semi-transparent, testaceous. Tegmina

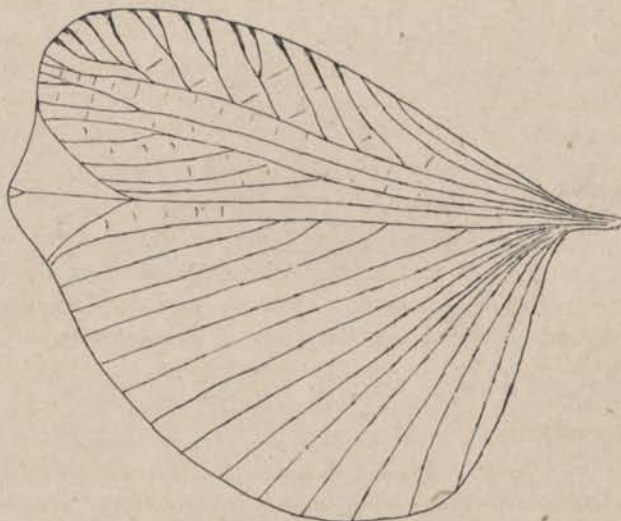


Fig. 14. *Liosilpha lata* n.sp. ♂  
Left wing. × 8.

exceeding the abdomen and reaching to about three-quarters of the cerci; semi-transparent, testaceous; 15 costals. Wings fuscous, 13 costals, their ends swollen; anterior ulnar unbranched or bifurcate; posterior ulnar with 4 branches; apical triangle well developed. Cerci long, 4mm, Styles reddish brown, pointed, about one quarter the length of the cerci.

	♂	♀
Total length	14.5 mm.	15 mm.
Body	11.5 "	13 "
Pronotum	4.5 × 6 "	4 × 6 "
Tegmina	11.0 "	11 "

*Hab*: ♀ Kuching, Sarawak (R. Shelford, July 1900), and ♂ Botanic Gardens, Singapore (H. N. Ridley, April–June 1908), both in the Oxford Museum; ♀ Kedah Peak, Malay Peninsula, 4000' (R. Hanitsch, November 1915); ♀ Gunong Angsi, Negri

Sembilan, 2000'–2790' (R. Hanitsch, April 1918). A specimen (♀) from Pundaluoya, Ceylon (E. E. Green, October 1898), in the Oxford Museum, apparently belongs to the same species.

**Liosilpha longe-alata** n.sp.

♀. Head testaceous; vertex and three indistinct bars across the face chestnut; (antennæ missing). Disk of pronotum reddish brown, sides semi-transparent, testaceous. Tegmina considerably exceeding the abdomen, semi-transparent, testaceous, 15 costals. Wings (in poor condition) fuscous; 13(?) costals, their ends swollen; posterior ulnar with 5 branches. Cerci long, 4 mm.

♀: Total length 16 mm.; body 11.5 mm.; pronotum  $4 \times 5.2$  mm.; tegmina 13 mm.

*Hab*: Java. One example ♀. Type in the Oxford Museum.

Differs from *L. lata* by its slightly larger size, the tegmina considerably exceeding the abdomen, and the disk of the pronotum not showing any black dots. The specimen in question carries a large egg-case, suture uppermost.

**Liosilpha picea** n.sp.

♂. Very convex, shining, dark castaneous. Head covered by the pronotum, mahogany coloured, antennæ long, filiform, slightly lighter. Pronotum and tegmina shining dark castaneous, the latter only barely exceeding the abdomen, venation obsolete. First four abdominal sternites shining black, sides testaceous to orange; remaining abdominal sternites castaneous. Legs (femora and tibiæ) strongly armed, mahogany; arolia present.

♂: Total length 17 mm.; body 16 mm.; pronotum  $5.2 \times 8$  mm.; tegmina 13.5 mm.

*Hab*: Matang, Sarawak (John Hewitt, May 1907). One example, ♂. Type in the Oxford Museum.

**Pseudophyllodromia laticeps** Walker.

*Pseudophyllodromia laticeps* Hanitsch. J., S.B., R.A.S., No. 69, p. 60, pl. I, fig. 3 (1915); J., F.M.S. Museums, Vol. VIII, part 3, p. 67 (1919).

Originally described from Singapore and Sarawak only. To judge by the long series in the Oxford Museum, presented by R. Shelford, this species seems to be common in Sarawak. I collected it in several places on the Malay Peninsula, viz.

on Maxwell's Hill, Perak, August 1908 ; the Semangko Pass, 2700', March 1912 ; Bukit Kutu, Selangor, 3400', April 1915, and on Penang Hill, 2000', May 1917 ; Mr. V. Knight, at Kota Tinggi, Johore, August 1917, and Messrs. Robinson and Kloss at Sandaran Agong, Korinchi Valley, Sumatra, 2500', June 1914.

***Pseudophyllodromia sex-punctata* n.sp.**

♂ and ♀. Shining, piceous. Head not covered by the pronotum, shining black, with a narrow golden line between the eyes. Pronotum trapezoidal, shining black, bordered all round with a narrow golden line which is interrupted in the middle of the posterior edge, and is marginal anteriorly and posteriorly, but sub-marginal laterally. Tegmina reaching to



Fig. 15. *Pseudophyllodromia sex-punctata* n.sp. ♂  
× 5.

the end of the abdomen, piceous, with 3 golden, elongated marks each, viz. one in the centre of the marginal field, a second in its apical part, and a third in the middle of the tegmen. Distal portion of the mediastinal area also golden. Legs piceous, tarsi rufous.

♂ and ♀. Total length 8 mm. ; pronotum  $2.4\frac{1}{2} \times 3.5$  mm. ; tegmina 5.3 mm.

*Hab*: Selangor (H. C. Pratt, 1907), one example, ♂. Type in the Oxford Museum. The same collection contains another ♂

from Selangor (G. Meade-Waldo, 1908), and a specimen, in poor condition, from Prince of Wales's Island (i.e. Penang). I took several specimens, ♂♂ and ♀♀, on Bukit Kutu, Selangor (April 1915), Gunong Kledang, Perak (November 1916), and Penang Hill (May 1917).

This species seems to be restricted to Penang and the Malay Peninsula. It is closely allied to *P. pulcherrima* Shelford, from Sarawak. Shelford (T.E.S., 1906, p. 267), in describing the latter, remarks: "An allied species occurs in Penang, but the unique example before me is in such bad condition that I prefer to await additional material before describing it." This is, no doubt, the specimen still now in the Oxford Museum, and the material collected by Pratt and Meade-Waldo, had apparently not come under his notice.

*P. sex-punctata* differs from *P. pulcherrima* in the following points:

- (1) The golden line on the pronotum is interrupted in the centre of the posterior margin;
- (2) the mediastinal area of the tegmina is piceous, not golden;
- (3) The horse-shoe shaped golden vitta on the tegmina of *P. pulcherrima* is here broken up into two elongated spots;
- (4) The elongated spot in the apical part of the marginal field is placed close to the margin of the tegmen.

#### **Ceratinoptera klossi** Hanitsch.

*Ceratinoptera klossi* Hanitsch. J., F.M.S. Museums, Vol. VIII, part 3, p. 68 (1919).

One example, ♂, adult, tegmina and wings fully developed. Pronotum chestnut, with pale margins in front and at the sides. Tegmina slightly projecting beyond the abdomen, chestnut, lighter at the outer margin and behind. Body and legs yellowish brown. Femora less strongly armed than the tibiae. Supra-anal lamina triangular. Cerci 7-jointed, pale yellowish, hirsute.

♂: Length of body 10 mm.; pronotum 3 × 3 mm.; tegmina 9 mm.

*Hab*: Sungei Kring, Korinchi Peak, 7300' (H. C. Robinson and C. B. Kloss, May 1914). One example, ♂. Type in the F. M. S. Museums.

The genus *Ceratinoptera* includes about 46 species from all parts of the world, except the Palearctic region, viz. from Africa, Madagascar, India, Java, Australia, Central and South America. The two other Malayan species, both from Java, are *C. sundaica* Fritze, which differs from *C. klossi* by its short, transverse supra-anal lamina, and *C. fulva* Brunner, which has hirsute legs.

#### **Allacta similis** Saussure.

*Blatta similis* Saussure. Mém. Soc. Phys. Nat. Genève, Vol. XX, p. 243 (1869).

*Blatta patula* Walker. Cat. Blatt. B. M., Suppl., p. 143 (1869).

*Apolyta pallida* Tepper. Trans. R. Soc. S. Austr., Vol. XVII, p. 46 (1893).

*Phyllostromia obtusata* Brunner. P.Z.S. p. 892 (1895).

*Allacta obtusata* Kirby. Syn. Cat. Orth. Vol. I., p. 100 (1904); P.Z.S., p. 156 (1909).

*Phyllostromia obtusata* Shelford. Gen. Ins., fasc. 73, p. 14 (1908).

*Allacta similis* Shelford. Gen. Ins., fasc. 73, p. 18 (1908).

*Allacta similis* Hebard. Occ. Papers, Bernice Pauahi Bishop Museum, Vol. VII, p. 327 (1922).

Saussure: ♂. Testaceo-ferruginea; pronoto trapezino, pellucido, disci circuitu testaceo-ferrugineo, in medio pellucido; elytris testaceis, ferrugineo-punctulatis; alis hyalinis, venâ discoidali 3-ramosâ; abdomine ferruginescente; laminâ supra-anali ♂ trigonali-truncatâ; infragenitali latâ, profunde fissâ, bilobatâ, margine utrinque dentem minutum basalem efficiente; stylis rudimentariis.

♂: longueur du corps 9 mm.; longueur de l'élytre 9.2 mm.; longueur du prothorax 2.5 mm.; largeur du prothorax 3.9 mm.

*Hab*: La Nouvelle-Hollande?

Brunner recorded this species from Kona, Hawaii, and Hebard from Hawaii, West Maui, Oahu and Kauai (Sandwich Is.). The only record from the Malayan region is Cocos Keeling Island (Kirby, l.c.).

#### **Sub-family 4. EPILAMPRINÆ.**

##### **Morphne dotata** Walker.

*Epilampra dotata* Walker. Cat. Blatt. B. M., Suppl. p. 130 (1869).

Shelford, in Gen. Ins. fasc. 101, p. 7 (1910) regarded *Epilampra dotata* Walker, and *E. ramifera* Walker, as synonyms of *Morphna badia* Brunner. A re-examination of Walker's



types in the Oxford Museum and additional material from the Raffles Museum, has convinced me that they are distinct, though closely allied species, and that whilst *E. ramifera* Walker is a synonym of *Morphna badia* Brunner, *Epilampra dotata* Walker has to stand.

Walker's description of his *E. dotata* is as follows :

♀. Picea, fusiformis, subtilissime striata, subtus testacea ; caput testaceum, prothoracem non superans, vertice piceo ; oculi invicem sat remoti ; antennæ testaceæ, nigro late fasciatæ ; prothorax testaceo marginatus, margine antico subeucullato, margine postico subproducto ; venter nigro vittatus et conspersus ; cerci testacei, piceo vittati ; pedes robusti, tibiis tarsisque posticis supra piceis ; alæ anticæ coriaceæ, abdomen longe superantes ; alæ posticæ semicoriaceæ, postice cinereæ.

♀. Piceous, fusiform, very minutely striated, testaceous beneath. Head testaceous, not extending beyond the prothorax ; vertex piceous. Eyes testaceous, moderately wide apart. Antennæ testaceous, shorter than the body ; a broad black band near the base composed of about twenty joints. Prothorax longer than half its breadth, bordered very narrowly with pale testaceous ; fore border slightly hooded ; sides hardly angular ; hind border slightly elongated. Abdomen beneath thinly speckled with black and having a black stripe which is abbreviated at each end ; supra-anal lamina bilobed, testaceous, except towards the base. Cerci testaceous, lanceolate, with a piceous stripe above. Legs testaceous, stout ; spines black at each end ; hind tibiæ and hind tarsi piceous above ; arolia large. Wings extending much beyond the abdomen, rounded at the tips. Fore wings coriaceous, corneous towards the base. Hind wings cinereous, semi-coriaceous ; discoidal area, except toward the tip and costal area, dark brown. Length of the body 21-23 lines ; of the wings 48-50 lines.

Of the two specimens here described, one has the prothorax more widened than the other.

Singapore. Sarawak. In Mr. Saunders' collection.

It may be useful to give a revised description of the type in the Oxford Museum.

♀. Head light testaceous, the vertex somewhat darker. Stalk of the antennæ light testaceous, the next 20 joints black, remainder light testaceous. Pronotum with the anterior margin parabolic, posterior margin rounded and produced in

the middle; dark castaneous, shining, with an exceedingly narrow testaceous border all round; smooth, not punctured, but with slight transverse corrugations, especially in front and behind. Tegmina castaneous, somewhat lighter than the pronotum, closely punctured. Wings transparent ferruginous. Mesonotum, metanotum and abdominal tergites ashy black. Abdominal sternites light testaceous, with a dark median line from the 2nd to the 5th segment and with numerous dark spots which are large and fairly regularly arranged along the posterior margin of the sternites, but small and irregularly scattered elsewhere. Legs with the upper side black, underside light testaceous.

♀: Total length 56 mm.; body 46 mm.; pronotum  $12.3 \times 17$  mm.; tegmina 46 mm.

*Hab*: Singapore (Wallace). Type (♀) in the Oxford Museum. The same Museum also contains a ♂, from "Borneo," and a ♀ from Sarawak, both collected by Wallace. This ♀ specimen, mounted with its tegmina expanded, is exceptionally large: body 50 mm.; pronotum  $13 \times 18.5$  mm.; tegmina 47 mm.; tip to tip of the tegmina 104 mm.

The Raffles Museum contains a ♂ from Pulo Ubin, near Singapore (August 1921), and a ♀ from Khao Ram, Peninsular Siam, 750'–1200' (February 1922).

### **Morphna badia** Brunner von Wattenwyl.

*Epilampra badia* Brunner. Syst. Blatt. p. 189 (1865).

*Epilampra ramifera* Walker. Cat. Blatt. B. M., Suppl. p. 132 (1869).

*Morphna badia* Hanitsch. J., S.B., R.A.S., No. 69, p. 66, pl. IV, fig. 20 (1915).

As Brunner's description of this species is somewhat meagre, it may be supplemented as follows from a ♂ example from Singapore (August 1921):

♂: Head testaceous, with the vertex fuscous; antennæ throughout light testaceous. Pronotum dark castaneous, shining, a narrow testaceous border in front and at the sides only faintly indicated; with a few very slight transverse corrugations, otherwise smooth, not punctured. Tegmina castaneous, deeply punctured. Wings ferruginous, transparent. Mesonotum, metanotum and abdominal tergites amber coloured. Abdominal sternites of the same colour, with some indefinite darker patches. Legs light chestnut, upper

and under sides of the same colour; tips of the spines slightly darker.

♂. Total length 50 mm.; body 38 mm.; pronotum  $10 \times 14$  mm.; tegmina 40 mm.

*Hab*: The Oxford Museum possesses the type ♂ of *M. ramifera* Walker, from Sumatra (Wallace); ♂, ♀ and larvæ from the Botanic Gardens, Singapore (H. N. Ridley, 1908); and ♂ and ♀ from Kalim Bungo, Nias (R. Mitschke, 1896).—The Raffles Museum also has ♂ and ♀ from the Botanic Gardens, Singapore (1921–3), and a ♀ example from Khao Rair, Peninsular Siam, 750'–1200' (February, 1922).

The differences in colour between *M. badia* Brunner and *M. dotata* Walker may thus be tabulated:

	<i>M. badia.</i>	<i>M. dotata.</i>
antennæ:	unicolourous	bicolourous.
abd. tergites:	amber	ashy black.
abd. sternites:	dark amber	light testaceous.
legs:	unicolourous:	bicolourous:
	castaneous.	above black, below testa- ceous.

### *Homalopteryx adusta* Walker.

*Homalopteryx adusta* Hanitsch. J., S.B., R.A.S., No. 69, p. 67 (1915); *Treubia*, Vol. III., p. 201 (1923).

Originally described from Sarawak. The Oxford Museum contains both the type (♀), collected by Wallace, and another (♀), from Kuching (Shelford, May 1900). In the "*Treubia*" (l.c.) I recorded this species (♂) for the first time from Java (Edam, Bay of Batavia). Two ♀ specimens, taken by Mr. V. Knight on Pulo Jarak, E. Coast, Malay Peninsula (April 1921), are probably referable to the same species, though their tegmina are shorter than those of the type, not covering the last two abdominal segments.

The specimens from these three different localities measure:

		Total length.	Pronotum.	Tegmina.
Sarawak:	♀:	23 mm.	$8.5 \times 12$ mm.	17 mm.
Java:	♂:	26 "	$8.5 \times 12$ "	19 "
Pulo Jarak:	♀:	27 "	$7 \times 10$ "	16.5 "

**Apsidopis oxyptera** Walker.

*Apsidopis oxyptera* Hanitsch. J., S.B., R.A.S., No. 69, p. 70 (1915).

This species seems to be known by three specimens only, viz. by the type, ♂, collected by Wallace in Sarawak and now in the British Museum; by a ♀ example from Kuching, Sarawak, presented by R. Shelford to the Oxford Museum in 1900; and by a ♀ which I took on Bukit Timah, Singapore, July 1911. This last specimen measures:

♀: Total length 34 mm.; body 25 mm.; pronotum 8 × 11 mm.; tegmina 27 mm.

**Apsidopis cyclops** Saussure.

*Apsidopis cyclops* Hanitsch. J., S.B., R.A.S., No. 69, p. 71 (1915).

So far apparently only known by a single specimen, ♂, from Southern Borneo (type in the Museum at Genève). I refer to this species a ♂ from Baram, Sarawak (October 1910) presented by the Sarawak Museum to the Raffles Museum. It agrees with Saussure's description by its depressed shape, its curious golden yellow sheen, and by the eyes being subcontiguous, practically touching each other. The dividing vein of the tegmina is strongly marked, almost black against the pale testaceous background. Its dimensions somewhat exceed those of the type, viz:

♂: Total length 30 mm.; body 21 mm.; pronotum 7 × 9 mm.; tegmina 24 mm.

**Pseudophoraspis emarginata** n.sp.

Fig. 16. *Pseudophoraspis emarginata* n.sp. ♂  
Apex of left tegmen.

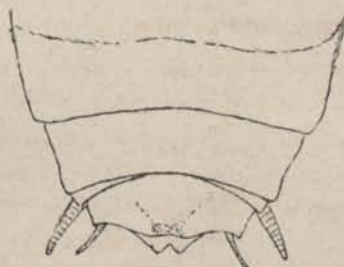


Fig. 17. *Pseudophoraspis emarginata* n.sp. ♂  
End of abdomen. Ventral view. × 3½.

♂. Large, flat, testaceous. Head entirely covered by the pronotum, testaceous, a broad castaneous band between the

eyes. Width between the eyes one-third the distance between the bases of the antennæ. (Antennæ missing.) Pronotum large, anterior margin parabolical, posterior margin obtusely angled, disk fusco—testaceous, margin much lighter, entire surface deeply punctured, the obtuse median posterior angle transversely corrugated, middle portion of posterior margin with longitudinal black lines. Tegmina large, much exceeding the abdomen, apex emarginate, dull testaceous, mediastinal vein with 6 branches, radial vein with a black blotch at its base, anal area impresso-punctate. Supra-anal lamina bilobate, extending beyond the sub-genital lamina, which is transverse, its latero-posterior angles bluntly produced. Anterior margin of anterior femora with 5 spines, mid-femora 4 spines, posterior femora 3 spines. Posterior metatarsus entirely spined. Arolia present.

♂: Total length 46 mm.; body 35.5 mm.; pronotum 10 × 13 mm.; tegmina 38.5 mm.

*Hab*: Long Akar, Baram River, Sarawak (J. C. Moulton, October 1st, 1920). One example, ♂. Type in the Oxford Museum.

Near *P. fruhstorferi* Shelford, from Tonkin (see Genera Insectorum, Epilamprinæ, p. 12) of which the types, ♂ and ♀, are also in the Oxford Museum, but differing from it in the following points: apex both of its tegmina and of the supra-anal lamina emarginate; pronotum and tegmina paler and less nitid; mediastinal vein of tegmina much less luteous at the base; pronotum impresso-punctate; eyes closer together, resembling thus *P. nebulosa* Burm.

***Pseudophoraspis nebulosa*** Burmeister (Plate XII, fig. 4).

*Pseudophoraspis nebulosa* Hanitsch. J., S.B., R.A.S., No. 69, p. 72, pl. I., fig. 4 (1915); Treubia, Vol III., p. 203 (1923).

As I have pointed out in the "Treubia" (l.c.), this species shows a remarkable variation both in size and colouring, especially amongst the ♀♀. A series of about fifty specimens in the Oxford Museum shows that the ♀♀ vary from 26.5 to 45 mm. in total length, and the ♂♂ from 33 to 41 mm. The ♀♀ which are always much more convex than the ♂♂, may be ashy grey, amber-coloured, or testaceous, with or without dark brown or black spots and vermiculations, whilst amber colour predominates amongst the ♂♂. The smallest ♀ in the Oxford

Museum, 26.5 mm. in total length, came from Pengalengan, W. Java, 4000' (1893).

This is a common Malayan species and has been recorded from the Malay Peninsula, Singapore, Sumatra, Java and Borneo. The Oxford Museum has a long series from Kalim Bungo, Nias (R. Mitschke, 1896). A single example, ♀, taken by Meade Waldo in Colombo, 1908, would almost seem to have been an accidental importation.

The illustration, of a specimen from Bukit Kutu, Selangor (April 1915), is intended to take the place of the one given in my former paper (l.c., pl. I., fig. 4), being of a much more typical appearance.

**Rhabdoblatta obtecta** Hanitsch.

*Rhabdoblatta obtecta* Hanitsch. J., S.B., R.A.S., No. 69, p. 77-  
pl. III., fig. 17 (1915).

I described this species first from one ♂, from the Botanic Gardens, Singapore, but took it since on Gunong Kledang, Perak, 2646', November 1916.

**Rhabdoblatta pfeifferae** Brunner von Wattenwyl. (Plate XII, fig. 5.)

*Rhabdoblatta pfeifferae* Hanitsch. J., S.B., R.A.S., No. 69 p. 75  
(1915). J., F.M.S. Museums, Vol. VIII., part 3, p. 68 (1919).

This species was first recorded from Borneo (Brunner) and subsequently from Sumatra (Rehn). I took an example on Mt. Poe, Sarawak, 4000' (April 1913) and Mr. Kloss at Rawang, Selangor (July 1914). The specimen figured came from the Korinchi Valley, Sumatra (H. C. Robinson and C. B. Kloss, June 1914).

**Rhabdoblatta procera** Brunner von Wattenwyl.

*Rhabdoblatta procera* Hanitsch. J., S.B., R.A.S., No. 69, p. 77 (1915);  
Trebua, Vol. III., p. 203 (1923).

Originally described from Java. As recorded, in the "Trebua" (l.c.), the Oxford Museum contains specimens from Pontianak, Dutch Borneo (Andre), Balabac, off Borneo (Staudinger and Bang-Haas, 1908), Kalim Bungo, Nias (Mitschke 1896), and Fort de Kock, Sumatra (A. de Bormans).

**Epilampra angusta** Hanitsch.

*Epilampra angusta* Hanitsch. Treubia, Vol. III., pp. 204-5, fig 5 (1923).

♀. Head exposed, testaceous, finely spotted with black. Pronotum small, rounded, produced posteriorly, testaceous, with large and small black spots intermixed. Tegmina clouded testaceous and chestnut; an interrupted black line along the radial vein, fading away posteriorly. Supra-anal lamina bilobed.

♀: Total length 48 mm.; body 36 mm.; pronotum 8 × 10 mm.; tegmina 40 mm.

*Hab*: Tjibodas, Java, one example, ♀. (January 1900).

This species approaches *E. inclarata* Walker, from Sarawak, in size\*; it is, however, of a much narrower build. Resembling by its small pronotum *Rhabdoblatta parvicollis* Walker, from

Sarawak, it differs from it by its mottled tegmina, and still more, by the tegmina and wings being rounded, not truncated. The tegmina of *R. parvicollis*, the type of which is also in the Oxford Museum, are light chestnut, with a few large pale blotches. A second specimen in the same collection, also from Sarawak (Mount Matang, June 1907), has the tegmina uniform light chestnut.



Fig. 18. *Epilampra angusta* Hanitsch. ♀  
× 1½.

**Epilampra funebris**, n.sp.

♀ Head not covered by the pronotum; vertex dark testaceous, with 3 longitudinal black lines; front of head deep

\* The measurements of the type ♀ of *E. inclarata* Walker in the Oxford Museum are: total length 50 mm.; body 35 mm.; pronotum 10 × 13 mm.; tegmina 40 mm.

castaneous, labrum and antennæ testaceous to pale orange. Pronotum with the posterior margin broadly angled, ashy-grey, deeply punctured, with a series of 9 round black spots along the middle of the anterior margin, and about 13 elongated black spots along its posterior margin. Tegmina much exceeding the abdomen, ashy-grey, mottled with black, and with numerous indistinct lighter ocelliform spots; 17 discoidal sectors, deeply punctured.

♀. Total length 41 mm.; body 32 mm.; pronotum  $7 \times 10$  mm.; tegmina 33 mm.

*Hab*: Long Ayap, Baram River, Borneo (J. C. Moulton, October 26th, 1920). One example, ♀. Type in the Oxford Museum.

Distinguished from most other species of *Epilampra* by its ashy-grey dull colour.

***Epilampra doleschali* Brunner von Wattenwyl.**

*Epilampra doleschali* Brunner. Syst. Blatt. p. 194 (1865).

*Epilampra doleschali* Shelf. Gen. Ins. fasc. 101, p. 15 (1910).

Brunner: Füsca, nebulosa. Capite a pronoto oblecto convexiusculo. Pronoto latere depresso, postice valde producto. Elytris latissimis, apice cum alis truncatis. ♀.

♀: Long. corp. 30 mm.; pronot.  $10 \times 13$  mm.; elytr. 37.5 mm.

*Hab*: Amboina (Vienna Museum).

The Oxford Museum contains a ♂ specimen, from Kuching, Sarawak (November 1895), which Shelford had compared with the named collection of the Paris Museum, and which he had doubtfully identified with this species.

It may be described as follows:

♂: Broad, depressed. Head covered by the pronotum, pale, testaceous, darker on the vertex. Pronotum ovoid, anterior margin thickened and raised, posterior margin obtusely angled; disk pale orange, sides yellowish testaceous, deeply punctured. Tegmina broad, yellowish testaceous, slightly mottled with rufous, semi-transparent; mediastinal and anal areas with shallow punctures, rest not punctured. Abdomen ventrally pale testaceous, with small scattered orange spots.

♂: Total length 44 mm.; body 35.5 mm.; pronotum  $10 \times 14$  mm.; tegmina 37 mm.



**Epilampra inclarata** Walker.

*Epilampra inclarata* Hanitsch. J., S.B., R.A.S., No. 69, p. 85 (1915).

The type (♀) of this species, from Sarawak, is in the Oxford Museum and measures: ♀: Total length 50 mm.; body 35 mm.; pronotum 10 × 13 mm.; tegmina 40 mm.

Walker's figures are somewhat misleading, as he gives the length of the "wings" as 42 lines (i.e. 88 mm.), by which, no doubt, he meant the entire spread of the tegmina from tip to tip.

**Epilampra lurida** Burmeister. (Plate XII, fig. 7.)

*Epilampra lurida* Hanitsch. J., S.B., R.A.S., No. 69, p. 85 (1915); J., F.M.S. Museums, Vol. VIII., part 3, p. 68 (1919)).

This species has so far been recorded from India, Sumatra, Java, Borneo and Celebes, but not yet from the Malay Peninsula. The specimen figured came from Lebong Tandai, Benkoelen, Sumatra, where Mr. C. J. Brooks had taken it at lamp light (November 1916).

**Epilampra moultoni** n.sp.

Head testaceous, with three longitudinal black lines between the eyes. Pronotum not covering the vertex, oval,

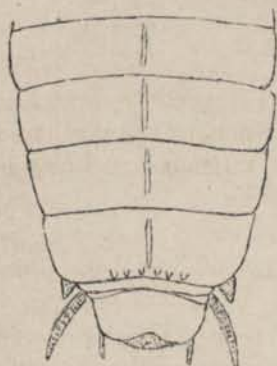


Fig. 19. *Epilampra moultoni* n.sp. ♂  
End of abdomen.  
Dorsal view. × 4.

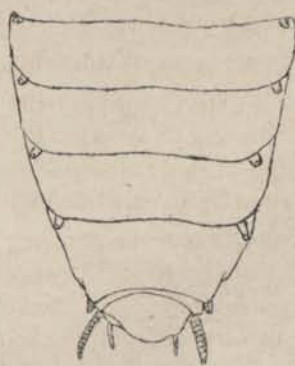


Fig. 20. *Epilampra moultoni* n.sp. ♂  
End of abdomen.  
Ventral view. × 4.

posterior margin distinctly angulate. Colour of pronotum testaceous, darker towards the middle, with deeply impressed points. Tegmina testaceous to rufous, faintly mottled;

humeral stripe well marked with pale straw yellow and black. Anal area with deeply impressed dots, mediastinal area less so, remainder of the tegmina smooth. Sub-genital lamina asymmetrical.

♂: Total length 34–35 mm.; body 28 mm.; pronotum  $7 \times 9$  mm.; tegmina 28 mm.

*Hab*: Long Ayap, Baram River, Borneo (J. C. Moulton, October 26th, 1920). Two examples ♂♂. Type in the Oxford Museum.

The retractile spiracular tubes are unusually distinct in this species. (See illustration.)

***Epilampra lyrata* n.sp.**

♀. Head not covered by the pronotum, testaceous, vertex with two longitudinal, somewhat diffused black stripes, uniting in front of the face to a large black patch, spreading out on either side below the insertion of the antennæ. Antennæ testaceous. Pronotum parabolic in front, obtusely angled behind; ground colour dark orange, densely mottled with small and large black dots, the largest of these along the posterior margin, and with a lyre-shaped design along the middle line, no punctures. Tegmina exceeding the body, testaceous, heavily mottled with black, with five more or less distinct light ocelliform spots along the radial vein.

♀. Total length 28 mm.; body 25 mm.; pronotum  $6.5 \times 8$  mm.; tegmina 23 mm.

*Hab*: Gunong Angsi, Negri Sembilan, 2000'–2790' (R. Hanitsch, April 1918). Type (♀) in the Oxford Museum. A second specimen, of the same place and date, without abdomen.

***Epilampra plena* Walker.**

*Epilampra plena* Hanitsch. J., S.B., R.A.S., No. 69, p. 79 (1915).

Hitherto known from Borneo, Celebes and New Guinea only. I refer to this species a ♀ example which I took on Penang Hill, 2000', May 1917. Its dimensions are:

♀: Total length 22.5 mm.; body 18.5 mm.; pronotum  $6 \times 7$  mm.; tegmina 18.5 mm.

Shelford regarded *E. fervida* Walker and *E. plena* Walker as synonymous. The two types are in the Oxford Museum. *E. fervida* is considerably the lighter and the more uniform in colour of the two. *E. plena* is darker and heavily mottled with

brown and black both on pronotum and tegmina. The specimen from Penang closely agrees both in size and colouring with the type of *E. plena*, the latter measuring :

♀: Total length 23 mm.; body 19 mm.; pronotum  $5.5 \times 6.5$  mm.; tegmina 19 mm.

Walker gives the dimensions of the type as follows: "Length of body 9 lines" [i.e. 19 mm.]; "of the wings  $18\frac{1}{2}$  lines" [i.e. 39 mm.]. It is evident that here, as in other cases, he referred to the measurements of the expanded tegmina, from tip to tip.

***Epilampra puncticollis* Walker.** (Plate XII, fig. 6.)

*Epilampra puncticollis* Hanitsch. J., S.B., R.A.S., No. 69, p. 80 (1915).

Hitherto known from Sarawak only, viz. by the type, ♂, collected by Wallace, which is now in the British Museum, and by a series in the Oxford Museum, taken by Shelford at Kuching. I took a specimen, ♀, on Kedah Peak, Malay Peninsula, December 1915, and Mr. V. Knight another at Kota Tinggi, Johore, August 1917. The former measures :

♂: Total length 21.5 mm.; body 17 mm.; pronotum  $5 \times 5.2$  mm.; tegmina 17 mm.

This is one of the smallest species of *Epilampra* known. Typical specimens of Shelford's collection, from Sarawak, measure :

	♂	♀
Total length	20 mm.	29 mm.
Body	16 "	20.5 "
Pronotum	$4 \times 5$ "	$5 \times 6$ "
Tegmina	17 "	20.5 "

The specimen figured came from Kota Tinggi.

***Epilampra saravacensis* Shelford.**

*Epilampra saravacensis* Hanitsch. J., S.B., R.A.S., No. 69, p. 83 (1915).

This species is represented by three specimens in the Oxford Museum collection, viz. the type, ♀, from Lingga, Batang Lupar River, Sarawak, another ♀ from Pontianak, Dutch Borneo (André van der Poll, 1909), and a third ♀ from Kuantan, Pahang (Vernon G. Bell, September 1913). The last of these specimens somewhat exceeds the type in size, viz. :

	Type (♀). (Sarawak).	♀ (Pahang).
Total length	56 mm.	61 mm.
Body	43 „	49.5 „
Pronotum	10.5 × 15 mm.	12 × 16 mm.
Tegmina	48 „	51 „

**Calolampra limbata** n.sp.

♀. General outline oval. Dark chestnut, with a luteous margin all round. Entirely smooth, strongly shining, no punctures or corrugations. Apterous.

Head slightly exposed, dark chestnut, either eye on its inner margin bordered by a light line. Antennæ fuscous. Pronotum parabolic, dark chestnut to black, like the rest of the body, but with a luteous border, this border being continued to the posterior end of the body, in the abdominal segments, however, partly obliterated by large black blotches and scattered smaller dots. Cerci lanceolate, luteous, each dorsally with an elongated dark mark. Legs luteous. Posterior femora with 7 spines, viz. 4 along the superior, and 3 along the inferior margin.

♀: Total length 24 mm.; pronotum 6.5 × 9.3 mm.; greatest width of the abdomen 12 mm.

*Hab*: Impounding Reservoir, Thomson Road, Singapore, January 27th, 1923. One ♀ example. Type in the Oxford Museum.

This species is closely allied to *Epilampra marginata* Brunner, from Pegu (Ann. Mus. Stor. Nat. Genova, Vol. XXXIII., p. 28, pl. I., fig. 9 (1893)), and to *E. laevis* Brunner, from Tenasserim (*ibid.*, p. 28), which two species should both be placed under *Calolampra*. It differs from the former by being entirely smooth (*E. marginata* shows longitudinal corrugations along the posterior margins of mesonotum, metanotum and the abdominal tergites), and from the latter by the luteous margins to the abdomen (the abdomen of *E. laevis* being unicolorous).

**Calolampra nitida** n.sp.

♀. General outline sub-conical, widest in the region of the 4th abdominal segment. Dark piceous, shining, smooth, with a few scattered minute punctures. Apterous.

Head exposed, black; antennæ fuscous. Pronotum parabolic. Width of body gradually increasing up to the 4th

abdominal segment, then suddenly tapering. 6th and 7th abdominal tergites with minute teeth along their posterior margin. Cerci very short, conical. Posterior femora with 3 spines only, viz. 2 on the superior, and 1 on the inferior margin.

♀: Total length 24 mm.; pronotum  $7 \times 10$  mm.; greatest width of the abdomen 13 mm.

*Hab*: Saribas, Sarawak (August 1922). Two examples, ♀♀. Type in the Oxford Museum.

#### **Calolampra pedisequa** Rehn.

*Calolampra pedisequa* Rehn. Proc. U.S. Nat. Mus., Vol. XXVII., p. 547 (1904).

*Calolampra pedisequa* Hanitsch. J., S.B., R.A.S., No. 69, p. 96 (1915).

This species was described by Rehn from a ♂ specimen taken by Dr. W. L. Abbott at Trang, Lower Siam. A specimen, also ♂, from the Impounding Reservoir, Thomson Road, Singapore (January 1923), which I have received from the Raffles Museum, agrees in all particulars with the description of the type. It is apterous and of a dull wood brown colour. Head much exposed, vertex bright luteous to ferruginous, face intensely black, shining, finely punctured. Eyes light grey. Antennæ only about one-third of the length of the body, black, terminal joints white. Thorax and abdomen above very closely and finely punctured, the posterior margins of mesonotum, metanotum and abdominal tergites all with minute corrugations (Rehn's "scars") which increase both in number and size towards the posterior end of the body.

♂. Total length 26 mm.; pronotum  $6.2 \times 9.5$  mm.; greatest width of the abdomen 12.5 mm.

#### **Sub-family 5. BLATTINÆ.**

#### **Cutilia nitida** Brunner von Wattenwyl. (Plate XIII, fig. 8.)

*Cutilia nitida* Hanitsch. J., S.B., R.A.S., No. 69, p. 99 (1915);  
Trebua, Vol. III., p. 207, (1923).

This is a widely distributed species. It was originally described from Amboina, by Brunner, and has since been recorded by Kirby from Ternate and the Philippines, by Shelford from Formosa, the Malay Archipelago and N.S. Wales, and by myself from Ceram and New Guinea. The Oxford

Museum has an example from the Shortland Islands, Solomon Archipelago.

The specimen (♂) figured came from Pulo Tioman, East Coast of Johore (V. Knight, June 1915).

**Methana dacrydii** n.sp. (Plate XIII, fig. 9.)

♂ and ♀. Head orange, a broad black band between the eyes, another black band across the middle of the face, just below the insertion of the antennæ; base of labrum black; antennæ much exceeding the abdomen, castaneous. Pronotum not quite covering the vertex, anteriorly parabolic, posteriorly straight, testaceous to orange, with curious black markings resembling an anchor enclosed by a horse-shoe; edge of pronotum narrowly margined with black. Tegmina (♂ and ♀) exceeding the abdomen, shining castaneous, an orange stripe occupying the greater part of the mediastinal area. Wings dull castaneous, lighter towards the base. Legs testaceous, distal portion of tibiæ and the entire tarsi castaneous; spines castaneous. Anterior abdominal tergites light castaneous, posterior tergites deep dull black. Abdominal sternites castaneous in the middle, orange towards the sides.

	♂	♀
Total length	25 mm.	26 mm.
Body	22 „	23.5 „
Pronotum	7 × 10 „	7 × 10 „
Tegmina	19.5 „	20 „

*Hab*: Penang Hill, 2400'. Several ♂♂ and ♀♀ examples. (R. Hanitsch, May 1917), taken under the loose bark of *Dacrydium* trees. Type in the Oxford Museum.

**Methana pallipalpis** Serville.

*Methana pallipalpis* Hanitsch. J., S.B., R.A.S., No. 69, p. 100 (1915).

Previously recorded from Java (Serville), Sumatra (De Haan), and Australia (Brunner). I took a ♀ example on Bukit Kutu, Selangor, 3000' (April 1915), which I refer to this species, as it agrees in all respects with Serville's description. It is practically of an uniform dark chestnut colour, strongly shining with the exception of the clypeus which is rufous. Antennæ (mutilated in the type) about 30 mm. in length, greatly exceeding the body. Tegmina exceeding the body, as in the type.

♀. Total length 24 mm.; body 20.5 mm.; pronotum  $7.5 \times 9.5$  mm.; tegmina 15.5 mm.

The Oxford Museum contains three Blattids, labelled respectively "*Periplaneta pallipalpis* Serville?", "*Periplaneta affinis* Saussure," and "*Dorylæa unicolor* Shelford," which all three I consider to come under this species. The first of these (sex? abdomen missing) is from Ceram, collected by Wallace. The second, ♂, labelled *Periplaneta affinis* Sss., is from Pulo Burong, 60 miles N.E. of Kuching, Sarawak (April 1889). Its total length is 27 mm.; body 25 mm.; pronotum  $8 \times 9.5$  mm.; tegmina 19 mm. The third, ♀, is the type of *Dorylæa unicolor* Shelford (Gen. Ins., fasc. 109, p. 14), from Talaut I., presented by Staudinger and Bang Haas (1908). I can see in it no difference from *M. pallipalpis*, except that its tegmina are very slightly shorter than the abdomen. However, there must remain some doubt as to its exact systematic position, as its posterior tarsi are missing.

The genus *Methana* Stal, is defined as having the posterior metatarsus spined beneath and shorter, or not longer, than the remaining joints which are unarmed beneath, whilst in *Dorylæa* the posterior metatarsus, also spined, exceeds the succeeding joints in length, of which the second is armed, and the third unarmed. According to this definition *M. pallipalpis* should really be placed under the genus *Dorylæa*, but in the absence of sufficient material in perfect condition I do not propose to make any change for the present.

*Hab*: If my identifications are correct, we get the following distribution for this species: Malay Peninsula, Sumatra, Java, Borneo, Talaut, Ceram, Australia.

***Methana saundersi* n.sp.** (Plate XIII, fig. 10.)

♂ and ♀. Head not covered by the pronotum; vertex dark castaneous to black, face testaceous to orange; antennæ exceeding the body, light brown. Pronotum anteriorly parabolic, posterior border straight, not angled; shining black, with an orange border all round which, however, is very narrow behind or almost obsolescent. Tegmina exceeding the body, dark castaneous. Coxæ of front legs entirely testaceous, those of mid and hind legs with castaneous lines at their outer edges; femora light castaneous, tibiæ and tarsi castaneous. Cerci large, castaneous.

	♂	♀
Total length	24 mm.	25 mm.
Body	20.5 "	21.5 "
Pronotum	7 × 9 "	7 × 10 "
Tegmina	18 "	19 "

*Hab*: ♂ and ♀. Tanglin, Singapore, taken by the Hon. C. J. Saunders, June 1917 and February 1918, after whom I have much pleasure in naming this species. Subsequently taken by Mr. V. Knight in Gilstead Road, Singapore, January and April, 1918. Type in the Oxford Museum.

Closely allied to *M. semi-marginalis* mihi, from Kuching, Sarawak, in which, however, the orange border of the pronotum is restricted to the front and the sides, widening out at the postero-lateral angles. There are three examples of a *Methana*, unnamed, from Ceylon, in the British Museum collection, in which the yellow margin of the pronotum is, especially behind, much wider than in *M. saundersi*.

#### ***Methana semimarginalis* Hanitsch.**

*Methana semimarginalis* Hanitsch. J., S.B., R.A.S., No. 69, p. 101, pl. V., fig. 28 (1915).

I described this species from a ♀ example, from Kuching, Sarawak, the type being now in the Oxford Museum. The same collection also contains two ♂♂ specimens, the one also from Kuching, December 1898, and the other from Banting, Sarawak, May 1909. The ♂ example from Kuching is slightly smaller than the type ♀.

	♂	♀
Total length	22 mm.	23 mm.
Body	20 "	21 "
Pronotum	6.5 × 9 "	7.2 × 9.5 "
Tegmina	16 "	17 "

#### ***Stylopyga picea* Brunner von Wattenwyl.**

*Stylopyga picea* Hanitsch. J., S.B., R.A.S., No. 69, p. 106 (1915); Treubia, Vol. III., p. 209 (1923).

Originally recorded by Brunner from the Nicobars, subsequently by the same author from Baram, Borneo (Abh. Senck. Nat. Ges., Vol. XXIV., p. 195 and p. 209), by Rehn from Trang, Lower Siam, and by myself from Verlaten I.



(Sunda Straits) and Krakatau. I also took it on Bukit Kutu, Selangor, 3400' (April 1915), and found it common under logs, Botanic Gardens, Singapore (January 1915).—The Oxford Museum contains specimens from Kuching, Sarawak, presented by R. Shelford.

As Brunner gives the measurements of the ♀ only, I add those of a ♂ example, from Singapore.

	♂ (Singapore).	♀ (Brunner's type).
Total length	23.5 mm.	25 mm.
Pronotum	7.5 × 9 „	7.5 × 9 „
Tegmina	4 „	3.5 „

*Hab*: Nicobars; Lower Siam; Malay Peninsula; Singapore; Borneo; Verlaten I.; Krakatau.

#### **Dorylaea flavicineta** De Haan.

*Dorylaea flavicineta* Hanitsch. J., S.B., R.A.S., No. 69, p. 02 (1915).

*Dorylaea flavicineta* Karny. Suppl. Entom. No. 4, p. 97 (1915).

This widely distributed species, known from Java, Borneo, Sumatra and Madagascar, and, according to Karny (l.c.) common in Formosa, has now also been taken on the Malay Peninsula, viz. at Tebing Tinggi, Kelantan, by Mr. V. Knight (July 1920), and by Mrs. Bell (November 1920).

#### **Periplaneta cavernicola** Chopard.

*Periplaneta cavernicola* Chopard. Mem. Asiat. Soc. Bengal, Vol. VI., p. 347, pl. XII., figs. 4-9 (1919).

Chopard [much abbreviated]: Grande espèce de couleur brun roux foncé, uniforme, un peu plus claire en dessous. Pubescence nulle en dessus, rare et courte en dessous; ponctuation assez fine, nulle sur le thorax. Pattes et antennes colorées.

Pronotum large, déprimé, à surface presque lisse, présentant seulement quelques ponctuations éparses et quelques rides près de bords antérieur et postérieur, ligne médiane très faiblement et obtusément carénée. Bord antérieur légèrement échancré au milieu, très largement arrondi latéralement; angles latéraux très arrondis; bord postérieur presque droit; les bords antérieur et postérieur très finement rebordés.— Organes du vol dépassant, dans les deux sexes, l'extrémité de

l'abdomen. Elytres larges, brun roussâtre éclairci vers l'apex, à bord antérieur très faiblement convexe, bord interne presque droit, apex arrondi. Veine discoïdale un peu sinuée, à 8-10 rameaux presque tous divisés vers le milieu; veine médiane bifurquée peu après le milieu de l'élytre, portant 8 à 10 rameaux subdivisés, parallèles entre eux et un peu sinués. . . . Champ anal allongé, à bord interne droit, présentant une quinzaine de nervures peu nettes, à intervalles ponctués-aréolés.—Ailes larges, à échancrure anale peu marquée, champ antérieur très large, brunâtre, champ postérieur jaunâtre, presque transparent. Veine médiastine peu marquée, à 3 ou 4 rameaux; veine médiane portant 6 rameaux très subdivisés; ulnaire postérieure à 7 rameaux bifurqués pour la plupart; champ postérieur occupé par une douzaine de nervures droites dont la 1<sup>re</sup> quatre fois divisée. . . .

♂, ♀: Length of body 34-36 mm.; pronotum 9 mm.; tegmina 28 mm.

Cette espèce ressemble beaucoup à *P. americana* L., mais s'en distingue aisément par sa coloration plus uniforme et les organes du vol beaucoup moins allongés. Chez le ♂ les pièces génitales sont très différentes, ainsi que la plaque suranale, et les styles sont plus courts et plus épais. Les jeunes individus sont vivement pigmentés.

*Hab*: Goah Glap, Bukit Tapang, Biserat, Jalor (N. Annandale, February 4th, 1916). On walls of inner caverns. Twenty-seven specimens (♂, ♀ and immature). As to its occurrence, see remarks under *Phyllodromia nigrocincta* Chopard, from the same locality. See page 409.

### **Periplaneta lata** Herbst.

*Periplaneta lata* Hanitsch. J., S.B., R.A.S., No. 69, p. 109 (1915);  
Treubia, Vol. III., p. 208 (1923).

The Oxford Museum contains a long series from Kuching, Sarawak, viz. 4 ♂♂, 6 ♀♀ and 3 larvæ, presented by R. Shelford, 1899-1901. The largest specimens measure.

	♂	♀
Total length	35 mm.	35 mm.
Body	28.5 „	28 „
Pronotum	9 × 11 „	8.3 × 12 „
Tegmina	27 „	27 „

*Hab*: So far known from Borneo only.

This species is readily distinguished from *P. americana* and *P. australasiæ* by the shape of the sub-genital lamina of the

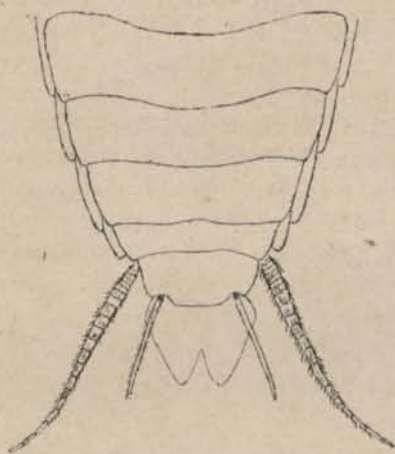


Fig. 21. *Periplaneta americana* L. ♂  
End of abdomen. Ventral view.  $\times 4$ .

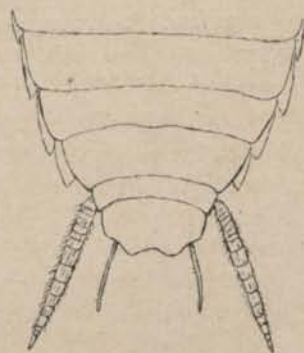


Fig. 22. *Periplaneta australasiæ*  
Fab. ♂  
End of abdomen.  
Ventral view.  $\times 4$ .

♂. In *P. americana* the lamina is rectangular, with the posterior margin more or less straight, except for an indentation on either

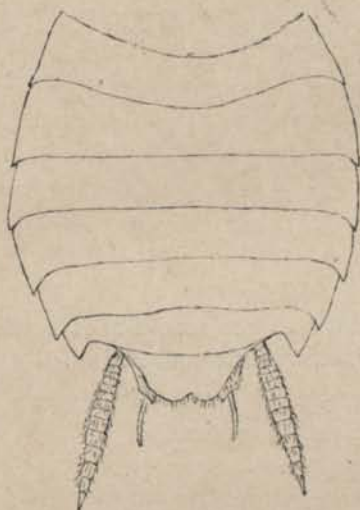


Fig. 23. *Periplaneta lata* Herbst. ♂  
End of abdomen. Dorsal view.  $\times 4$ .

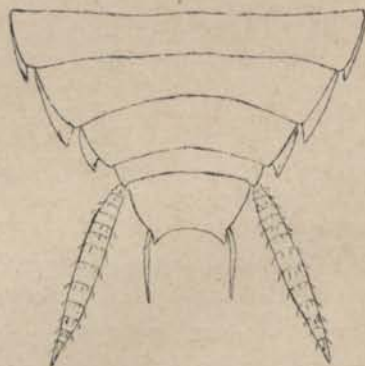


Fig. 24. *Periplaneta lata* Herbst. ♂  
End of abdomen. Ventral view.  $\times 4$ .

side to receive the styles, and it is in that species much exceeded by the supra-anal lamina. In *P. australasiæ* the sub-genital

lamina has a shallow indentation in the middle of its posterior margin. In *P. lata* the lamina is bulkier, with a deeper, crescent-like excavation, and with its postero-lateral angles drawn out into short horns. The cerci are longest in *P. americana*, and stoutest in *P. lata*.

***Periplaneta montana* n.sp.**

♂. Small, slender, elongate. Entirely castaneous, nitid, with the exception of the antennæ which are rufous. Tegmina greatly exceeding the abdomen. Sub-genital lamina transverse, posteriorly with a semi-lunar indentation beyond which the

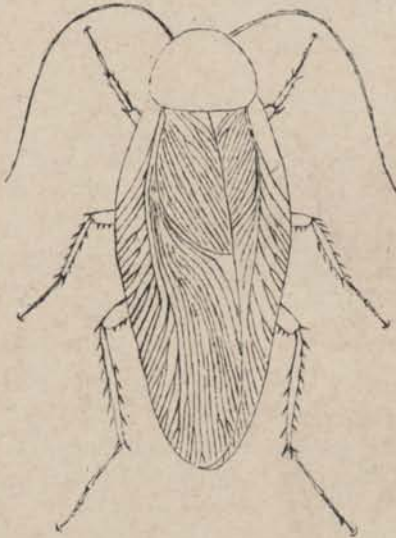


Fig. 25. *Periplaneta montana* n.sp. ♂  
× 2½.

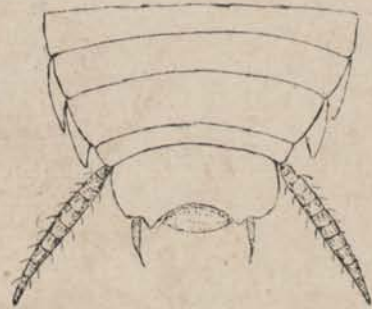


Fig. 26. *Periplaneta montana* n.sp. ♂  
End of abdomen. Ventral view. × 7.

supra-anal lamina is seen slightly to project. Styles much shorter than in *P. americana*, *P. australasiæ*, and *P. lata*.

Two other specimens (damaged, abdomen missing) seem both to be ♀♀ and to belong to the same species.

	♂	♀ (?)
Total length	23 mm.	19 mm.
Body	15 "	? "
Pronotum	5 × 7 "	4.5 × 6.5 "
Tegmina	19 "	15 "
Antennæ	25 "	21 "

*Hab*: Gunong Kledang, Perak, 2646' (R. Hanitsch, November 1916), 1 ♂ example. Type in Oxford Museum.—Bukit Kutu, Selangor, 3457' (R. Hanitsch, April 1915). Two ♀♀ examples.

**Scabina horrida** Hanitsch.

*Scabina horrida* Hanitsch. *Treubia*, Vol. III., part 2, pp. 207-8, fig. 8 (1923).

♂. Body dark castaneous to black, shining. Antennæ, anterior and median tarsi rufous (Posterior tarsi missing). Head covered. Antennæ longer than the body. Pronotum parabolic, posteriorly truncated, very shining. Scutellum not exposed. Tegmina quadrate, corneous, laterally reaching to the hinder margin of the metanotum, centrally receding. Wings rudimentary, squamiform, very slightly projecting

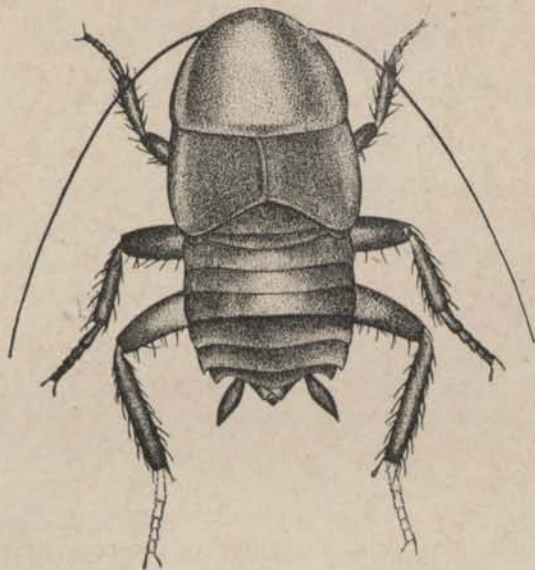


Fig. 27. *Scabina horrida* Hanitsch. ♂  
× 2.

beyond the tegmina. Posterior angles of the abdominal tergites produced backwards, slightly so in the anterior, strongly in the posterior tergites. Cerci long, broad, flattened. Styles long, stout, pointed. Legs heavily spined. Femoral spines in two rows; lower row of front femora with about 15 spines;

spines of mid femora longer, but less closely set; those of the hind femora longest.

♂: Total length 25 mm.; pronotum 7.5 × 11 mm.; tegmina 7mm.; cerci 5 mm.

*Hab*: North Borneo (Mohari, 1912). One ♂ example. Type in the Buitenzorg Museum.

The genus *Scabina* was established by Shelford\* for *Pelmatosilpha* (?) *antipoda* Kirby† from Queensland. The Oxford Museum has two specimens (♂ and ♀) of that species, from Tambourine Mt., S. Queensland, 2000', presented by Dr. Eland Shaw. The present species differs from *S. antipoda* by the edges of the pronotum not being turned up, by the scutellum not being exposed, by the femora being much more heavily spined, and by the cerci being considerably longer.

This genus had not before been recorded from the Malayan sub-region.

#### **Catara rugosicollis** Brunner von Wattenwyl.

*Catara rugosicollis* Hanitsch. J., S.B., R.A.S., No. 69, p. 117, pl. V., figs. 26 and 27 (1915); J., F.M.S. Museums, Vol. VIII., part 3, p. 70 (1919); Treubia, Vol. III., p. 210 (1923).

This species is found throughout the Malay Archipelago and has been recorded from the Malay Peninsula, including Singapore, from Sumatra, Java and Borneo. I reproduce my remarks on it from the "Treubia" (l.c.):

The place of origin of the type (♂) was given by Brunner doubtfully as "Java?" Both ♂♂ and ♀♀ have since repeatedly been recorded from Java, and also from the Malay Peninsula, Singapore, Sumatra and Borneo. The Oxford Museum has a long series from Sarawak.

Brunner gave the following dimensions: ♂: body 15 mm.; tegmina 22 mm.; pronotum 3.7 × 5 mm. This is exceeded by the largest ♂ in the Oxford Museum, from Sarawak: body 19 mm.; tegmina 27 mm.; pronotum 7.5 × 8 mm.

The ♀ shows similar variation in size. Saussure‡ who described this species under the name of *Archiblatta valvularia*, from Java, gave the following dimensions: body 20 mm.; pronotum 4.7 × 7.3 mm. The largest ♀ in the Oxford Museum,

\* T.E.S., London, 1909, p. 305.

† A.M.N.H.(7), Vol. XII., p. 376 (1903).

‡ Mém. Soc. Genève, Vol. XXIII., p. 118, pl. X., fig. 40 (1873).

from Sarawak, measures: body 23.5 mm.; pronotum  $8 \times 12$  mm.; and this is exceeded by the largest ♀, from Borneo, in the present collection, viz. body 25.5 mm., pronotum  $9 \times 12$  mm.

The two sexes show a striking difference, the ♂ being slender, delicate and long-winged, the ♀ short, stout and entirely apterous. The ♂ was sufficiently described by Brunner. The ♀ may be characterised as follows:

♀. Entirely apterous. Dull black, with the exception of the eyes which are light brown. Head covered. Pronotum parabolic, lateral margins raised and posteriorly produced into heavy spines, its surface corrugated, deeply pitted with dots. Mesonotum and metanotum also deeply pitted, but less corrugated. Abdominal tergites uneven, not pitted, their posterior margins granulated. All femora entirely unarmed. Anterior tibiæ along their inner aspect covered with a dense brush-like mass of russet-coloured hair; beyond this brush, towards the upper aspect of the tibiæ, a few (about 5) spines; median and posterior tibiæ with two rows of about 4 spines each.

In smaller, i.e. probably younger, specimens we find distinct spines instead of the granulation along the posterior margins of the abdominal tergites. They are specially pronounced in a specimen, 20 mm. in length, in the Oxford Museum, from Sarawak (Wallace). The burrowing habit of this species probably causes the spines to be worn away in older specimens.

The brush on the anterior tibiæ of the ♀ seems to have escaped the notice of former observers. It is not found in the ♂, or only represented by a few scattered fluff-like hairs. Mr. Hamm has suggested to me that the brush may be of use to the ♀ for cleaning itself, and this seems a likely explanation. The insect is of a burrowing habit, but the work of burrowing is probably entirely done by the ♀ which, being apterous and having a stout body and a thick chitinous skin, appears much better adapted to it than the long-winged, slender-legged and altogether frail-looking ♂. A brush would thus not be required by the ♂, but would be very necessary to the ♀.

#### Genus **PROTAGONISTA** Shelford.

A.M.N.H. (8), Vol. I., p. 158 (1908); Genera Insectorum, fasc. 109, p. 22 (1910).

Shelford: Antennæ slightly incrassated. Eyes further apart than antennal sockets. True ocelli present. Pronotum

almost rectangular, as long as broad, sides not deflexed, not covering vertex of head. Pronotum and tegmina with a fine erect pubescence. Tegmina and wings fully developed in the male (female unknown), exceeding the apex of the abdomen. Genital styles present. Cerci moderate. Legs slender; front femora with a complete row of spines on anterior margin beneath, none on posterior margin; mid and hind femora with only one spine on each margin. Spines on posterior tibiae on outer aspect biserially arranged. Posterior metatarsi very long, considerably exceeding the remaining joints in length; all the pulvilli apical; arolia minute.

**Protagonista pertristis** n.sp.

♀. Probably immature. Head black, very finely punctate; labrum, clypeus, and palpi testaceous; eyes testaceous, very slightly nearer than the antennal sockets. Antennæ black (terminal joints missing), pubescent. Pronotum quad-



Fig. 28. *Protagonista pertristis* n.sp. ♀  
× 2½.

angular, somewhat longer than broad, not covering vertex of head, black, finely punctate, strongly pubescent at the anterior and lateral margins; margins all round thickened and raised, a deep semi-lunar depression across the anterior third,



slightly continued towards the posterior angles, another depression just behind the anterior margin. Tegmina dark chestnut, deeply pitted, short, truncated, reaching to the second abdominal segment only, with their postero-lateral angles produced. Wings absent. Abdomen black, slightly shining, smooth, broadest at the fourth segment, suddenly narrowing from the fifth. Vulva strongly haired. Cerci long, orange-yellow, haired. Legs long and slender. Front femora with a comb-like series of about 11 spines on anterior margin; mid femora with 2 spines on anterior, and 1 spine on posterior margin; hind femora with 2 spines on anterior, and 1 or 2 spines on posterior margin (the specimen in question has 2 spines on the right, and one on the left femur). Hind tibiæ with the spines on outer aspect biserially arranged. Hind tarsi missing. Front and mid tarsi long, about as long as the tibiæ, the metatarsus occupying nearly one-half of the entire length; metatarsus spined, the remaining joints not armed.

♀. Total length 18 mm.; pronotum 5.5 × 5 mm.; tegmina 5 mm.

*Hab*: Semangko Pass, Malay Peninsula, 2700' (R. Hanitsch, March 1912). One ♀ example. Type in Oxford Museum.

The only other known species of this genus is *Protagonista lugubris* Shelford, from Tonkin (A.M.N.H. (8), Vol. I., p. 158, pl. IX., fig. 1 (1908)), the type of which is also in the Oxford Museum.

#### Sub-family 6. PANCHLORINÆ.

##### *Leucophaea striata* Kirby.

*Leucophaea striata* Hanitsch. J., S.B., R.A.S., No. 69, p. 122 (1915).

*Leucophaea striata* Chopard. Mem. As. Soc. Bengal, Vol. VI. (1919), pp. 358-363, pls. XII.-XIII., figs. 15-20.

Chopard gives a detailed re-description of this species from material collected by Annandale at the Batu Caves, Kuala Lumpur (January 2nd, 1916) and at Goah Glap, Bukit Tapang, Biserat, Jalor (February 4th, 1916). In the former locality Annandale found numerous specimens burrowing in bat's guano at the entrance to the caves, or crawling under sodden logs on the ground, whilst at Goah Glap the floor, chiefly composed of bat's guano, literally heaved with this species. (See also Annandale, Entom. Records, Vol XII, p. 75 (1900), and Mem. As. Soc. Bengal, Vol. VI. (1919), p. 343, footnote).

## Sub-family 8. CORYDINÆ.

**Miroblatta petrophila** Shelford.

*Miroblatta petrophila* Shelford. T.E.S. 1906, p. 272, pl. XIV.,  
figs 4, 4a; Gen. Ins., fasc. 109, p. 21 (1910).

*Miroblatta petrophila* Hanitsch. J., S.B., R.A.S., No. 69, p. 115  
(1915).

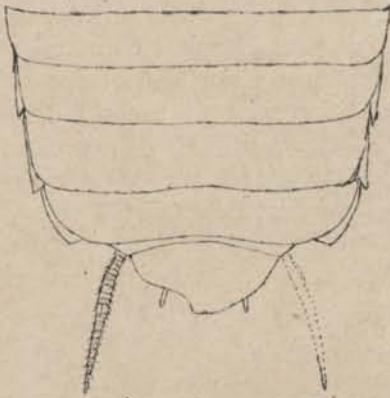


Fig. 29. *Miroblatta petrophila*  
Shelford. ♂  
End of abdomen. Ventral view. × 3.

Shelford established the genus *Miroblatta* for this remarkable Blattid, from Mt. Santubong, Sarawak, and placed it amongst the Blattinæ, though the ♀ was unknown to him, and though the single ♂ obtained differed by its unarmed posterior femora from the typical members of that sub-family. Chopard (Mem. Asiat. Soc., Bengal, Vol. VI., p. 353 (1919)) described a few years ago a curious ♀ Blattid (*Miroblatta silphoides*) from the Batu Caves, Selangor, and pointed

out its close relationship to *M. petrophila* Shelford. As he found its sub-genital lamina not to be valve-like, he removed

*Miroblatta* from the Blattinæ to the Corydinæ and placed it near to *Homœogamia* Burmeister, from America.

Through the courtesy of Dr. Eric Mjöberg, Curator of the Sarawak Museum, I have been able to examine a ♀ specimen of *M. petrophila* from Mt. Santubong, Sarawak, (August 1900), and this entirely confirms M. Chopard's opinion. The sub-genital

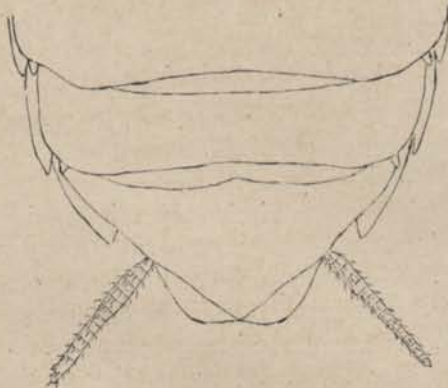


Fig. 30. *Miroblatta petrophila* Shelford. ♀  
End of abdomen. Ventral view. × 3.

lamina of the ♀ is not valve-like, but of the typical character of the Corydinæ, and the asymmetrical rounded

subgenital lamina of the ♂ also recalls that of a *Homæogamia*. I therefore agree with Chopard in removing this genus from the Blattinæ to the Corydinæ. The ♀ specimen from Santubong is slightly larger than the ♂ type from the same locality, whilst another ♂, from Lio Matu, Ulu Baram (October–November 1914), also sent to me by Dr. Mjöberg, is smaller than the type

	♂ type	♂	♀
	Mt. Santubong.	Lio Matu	Mt. Santubong.
Total length	40 mm.	38 mm.	43 mm.
Tegmina	26 ..	25 ..	28 ..
Pronotum	14 × 17 ..	13.5 × 15 ..	14.5 × 17.5 ..

The tegmina of the ♂ type are of the length of the body, those of the other ♂ slightly exceed the abdomen, whilst those of the ♀ reach only to the base of the supra-anal lamina.

#### *Dyscologamia chopardi* n.n.

*Mivoblatta silphoides* Chopard (nec Walker). Mem. Asiat. Soc. Bengal, Vol. VI., p. 353, pl. XII., figs. 10–14 (1919).

Chopard [much abbreviated]: ♀: Assez grande espèce, noirâtre, à facies de Coléoptère; pattes, antennes et pièces buccales brun foncé, un peu roussâtre; clypéus présentant une bande blanchâtre très nette. Toute la surface du corps couverte d'une assez fine ponctuation et d'une pubescence rousse, très courte et serrée; sur le pronotum cette pubescence est portée par de petits tubercules arrondis, luisants.

Tête entièrement cachée sous le bord antérieur du pronotum, assez étroite, brun noirâtre avec les pièces buccales rousses et une bande blanche divisant le clypéus en deux parties presque égales. . . . Pronotum très grand, large, à surface très bombée, avec deux profondes impressions longeant le bord antérieur sur presque toute sa longueur; bord antérieur très convexe, bord postérieur presque droit, angles postérieurs subaigus; toute la surface est couverte de petits tubercules arrondis, luisants, plus volumineux et plus épars au fond des impressions latérales; pubescence rousse, couchée et assez rare sur le disque, dressée, un peu plus longue et plus abondante le long du bord antérieur.—Elytres un peu plus courts que l'abdomen, à surface assez bombée, couverte d'une fine ponctuation et d'une courte pubescence rousse, couchée; la côte est très saillante et, en dessous, près de la base, un repli vient couvrir en partie les épisternes et épimères métathoraciques, formant

une sorte d'épipleurie rudimentaire. Bord antérieur presque droit à la base, convexe ensuite; bord interne presque droit, apex arrondi; à l'élytre droit, la partie du bord interne recouverte par l'autre élytre est lisse, amincie, présentant une faible réticulation irrégulière vers l'apex. La nervation est réduite à une forte nervure située vers le tiers antérieur de l'élytre et se perdant rapidement, les nervures habituelles sont simplement indiquées par les stries formées par la ponctuation et sont surtout visibles vers l'apex de l'élytre. Ailes peu développées, presque réduites à leur partie antérieure; celle-ci est assez grande, à bords convexes, apex arrondi, de couleur jaunâtre, rembrunie le long des bords antérieur et interne; les nervures sont très marquées, épaisses à la base, mais arrivant à se perdre vers l'apex dans une réticulation large et irrégulière. Veine médias-tine simple; humérale trifurquée; veine discoidale sinuée à la base, portant 3 rameaux dont l'antérieur trifurqué et le median bifurqué. Champ postérieur très petit, atrophié, occupé par 4 nervures dont la 1<sup>re</sup> bifurquée.

Length of body 25.5 mm.; pronotum 9.5 × 14 mm.; tegmina 16.5 mm.

*Hab*: Batu Caves, Kuala Lumpur (N. Annandale, January 2nd, 1916); burrowing in bat's guano among stones, at entrance to caves. One ♀. Type in the Indian Museum, Calcutta.—A second example of this species, also ♀, in the Collection Finot (Paris Museum), from Borneo.

Dr. Chopard (in lit.) agrees with me that this species is to be removed from *Miroblatta* Shelford, to *Dyscologamia* Saussure, and as the specific name, given by Chopard, is preoccupied by *D.* (= *Polyphaga*) *silphoides* Walker, from Cambodia (Mouhot), the type (♀) of which is in the Oxford Museum, I propose the name of *D. chopardi* for it.

A specimen, ♀, also from the Batu Caves, Selangor, collected by Dr. E. Mjöberg and kindly sent to me for examination, apparently belongs to the same species. The chief difference from the other species of this genus seems to be the shortness of the tegmina of the ♀ which reach only to the base of the supra-anal lamina. The ♂ is unknown.

#### ***Corydia forceps* Hanitsch.**

*Corydia forceps* Hanitsch. J., S.B., R.A.S., No. 69, p. 125, pl. VII., fig 41 (1915).

The type of this species, a single ♂, came from Bukit Kutu, Selangor, where I took it in April 1915. An unnamed

example, also ♂, in the Oxford Museum collection, taken by Mr. Ridley in the Botanic Gardens, Singapore, August-September 1906, belongs to the same species.

**Holocompsa debilis** Walker.

*Holocompsa debilis* Hanitsch. J., S.B., R.A.S., No. 69, p. 128 (1915); *Treubia*, Vol. III., p. 211 (1923).

The Oxford Museum contains specimens from Sarawak, including Walker's type, from Prince of Wales' Island (i.e. Penang), and from Kandy, Ceylon (Dr. G. B. Longstaff, 1908). I have recorded this species from Buitenzorg, Java (Karny and Siebers, 1920).

**Sub-Family 9. OXYHALOINÆ.**

**Diploptera dytiscoides** Serville.

*Diploptera dytiscoides* Hanitsch. J., S.B., R.A.S., No. 69, p. 133, pl. VI., fig. 31 (1915); *Treubia*, Vol. III., p. 212 (1923).

As I pointed out in the "*Treubia*" (l.c.), this species seems to be more widely distributed than I supposed in my former paper. Serville's type came from Australia, and Brunner recorded it from Burma and Tahiti. The Oxford Museum has specimens from Honolulu (Blackburn), Buru (Mouhot), Sarawak (Wallace), Manila,\* and Ceylon (Thwaites, 1872). I took it on Fort Canning, Singapore (February 1915) and on Gunung Kledang, Perak (November 1916).

Distribution: Ceylon; Burma; Malay Peninsula; Singapore; Sarawak; Philippines; Buru; Australia; Honolulu; Tahiti. According to Morgan Hebard† common and injurious on Hawaii, doing particular damage by gnawing away the bark of certain Cypress trees.

**Chorisoneura lativitrea** Walker.

*Chorisoneura lativitrea* Hanitsch. J., S.B., R.A.S., No. 69, p. 134 (1915).

This species had so far been known from Cambodia and Sarawak only, but the Hon. C. J. Saunders took recently a ♀ example at Singapore (June 1922). This specimen shows well

\* Not Madras, as I erroneously stated in J., S.B., R.A.S., No. 69, p. 133.

† Dermoptera and Orthoptera of Hawaii. In "*Occ. Papers, Bernice Pauahi Bishop Museum*," Vol. VII., p. 336 (1922).

the "deep ochraceous band on the fore part of the vertex," mentioned by Walker. The band extends from eye to eye.

♀. Total length 10 mm.

**Areolaria fieberi** Brunner von Wattenwyl.

*Areolaria fieberi* Hanitsch. J., S.B., R.A.S., No. 69, p. 136 (1915).

Brunner's somewhat meagre description may be amplified as follows :

Head castaneous, shining. Eyes black, far apart. Antennæ slightly plumose ; their basal half, or less, black ; distal half testaceous, except for the last few joints which are black. Pronotum sub-quadrate to round, punctate, castaneous, laterally with a pale border, with yellowish pubescence. Tegmina castaneous, mediastinal area yellowish, seriato-punctate, with yellowish pubescence.

Total length 9 mm.

Readily distinguished from *A. signata* Shelford, by the absence of a light central vitta on the pronotum, and by the absence of a fuscous stripe across the tegmina.

*Hab* : Previously recorded from Java (Brunner) and Penang (Kirby). Since taken again on Penang Hill by myself (May 1917), and by Prof. C. J. Baker at Singapore, 1917.

Genus **PROSOPECTA** Saussure.

Saussure, *Revue de Zoologie* (2), Vol. XVI., p. 325 (1864) ; *Mém.*

*Hist. Nat. Mexique*, Vol. I., p. 169 (1864).

Shelford, *P.Z.S.*, pp. 358-376, pl. XLVIII. (1912).

Saussure : " Corps ovoïde ou globuleux, très bombé. Prothorax elliptique, ayant son bord antérieur subexcisé, offrant de chaque côté un lobe relevé ; tête débordante.

Elytres cornés, dénués de sillon anal, très-bombés et luisants, sans nervures distinctes, mais occupés par des lignes de punctuations ; le champ anal presque carré ou subcirculaire.

Ailes amples, ayant seulement leur extrémité repliée en dessus, et suivant un pli transversal oblique ; la portion réfléchie antérieure, plissée en outre de manière à former un pli longitudinal rentrant. La portion basilaire occupée par des nervures nombreuses infléchies symétriquement à l'extrémité vers les marges ; pas de nervures transversales bordant la harnière. La portion réfléchie, en forme de coin triangulaire, demi-coriacée, dénuée de nervures, le pli longitudinal seul

marqué par une ligne cornée. La portion basilaire de la zone renversée formant une partie du bord postérieur de l'aile ; l'énchancrure anale peu prononcée, tombant à la limite des deux portions de la zone renversée et non à la limite de la zone renversée et de la zone rayonnée.

Facies des Coléoptères de la famille des Chrysomélines (*Coccinella*).

***Prosoplecta dexter-alleni* n.sp.** (Plate XIII, fig. 11.)

♂. Head not covered by the pronotum, testaceous, lower part of face reddish ; antennæ filiform, equalling the body in length, light brown, darker distally. Pronotum elliptical, disc reddish-brown, margin sulphur-yellow. Tegmina castaneous, not shining, with the mediastinal area, three round maculæ and seven longitudinal striæ on either tegmen sulphur-yellow, one of the maculæ being placed in the humeral angle, a second close to the inner margin of the mediastinal vein, and a third at the same level, but closer to the middle line of the body ; the seven striæ which enclose a few less distinct ones, being confined to the distal half of the tegmina. A minute flattened tubercle just behind the humeral macula. Abdomen and legs reddish brown.

♂: Total length 7 mm. ; length of tegmina 4 mm. ; pronotum  $2 \times 2.5$  mm.

*Hab* : Seremban, Malay Peninsula (Rev. G. Dexter Allen, October 25th, 1917). One example, ♂. Type in the Oxford Museum.

This is the first species of *Prosoplecta* recorded from the Malay Peninsula, the genus having so far been known only from the Philippines, Celebes, Batchian and Ceram. Shelford (P.Z.S., 1912, p. 368) points out the wonderful examples of mimicry of the species of this genus with Coccinellid and Chrysomelid beetles.

**Sub-family 10. PERISPHAERINÆ.**

***Perisphaeria armadillo* Serville.**

*Perisphaeria armadillo* Hanitsch. J., S.B., R.A.S., No. 69, p. 142, pl. VII., fig. 39 (1915) ; Treubia, Vol. III., p. 213 (1923).

The type of this species came from Java. There are in the Oxford Museum specimens from Singapore, Amboina, Aru and New Guinea, all collected by Wallace, and in the Buitenzorg Museum specimens from Hoorn and Edam, Bay of Batavia,

and Klein Kombuis, Java Sea, taken by Dammerman, 1919 and 1920. I took it on Bukit Kutu, Selangor, April 1915, and on Gunong Kledang, Perak, November 1916.

This species, with its yellowish head, is readily distinguished from the closely allied *P. glomeriformis*, Lucas, in which the head is black.

**Perisphaeria lucasiana** Saussure and Zehntner.

*Perisphaeria lucasiana* Hanitsch. J., S.B., R.A.S., No. 69, p. 143 (1915).

Originally recorded from Java. The Oxford Museum contains three specimens, all ♀, two of which were collected by Wallace on Mt. Ophir, Malay Peninsula. The third specimen is without locality label. The ♂ seems to be unknown.

**Pseudoglomeris aterrima** Herbst.

*Blatta aterrima* Herbst. Fuessly Arch. Insekt. p. 185, pl. XLIX., fig. 9 (1786).

*Devocalymma atra* Brunner. Nouv. Syst. Blatt. p. 321, pl. IX., fig. 41 (1865).

*Pseudoglomeris aterrima* Kirby. Syn. Cat. Orth. Vol. I. p. 190 (1904).

Brunner: 'Tota atra. Pronoto supra caput cucullato, disco gibbo, dense impresso-punctato. ♂.

♂. Long. corp. 16 mm.; long. pronoti: 4.8 mm.; pron. transv. 7.5 mm.; elytr.: 16 mm.

Java (Musée de la Novara).

**Pseudoglomeris flavicornis** Burmeister.

*Pseudoglomeris flavicornis* Hanitsch. J., S.B., R.A.S., No. 69, p. 143 (1915); Treubia, Vol. III., p. 213 (192).

This species, originally described from Java, has been recorded by Kirby from Tenasserim and Cambodia, by Annandale from Rámanád, S. India, and by Bolivar doubtfully from Trichinopoly, Madras Presidency. The Oxford Museum has specimens from Bombay, Madras, Sylhet, Mouhot and Assam, and the Buitenzorg Museum, besides specimens from Java, also an unusually large ♀ from Borneo (1912). It measures: body 24 mm.; pronotum 8.5 × 12 mm., against the average of 16 mm. for the body, and 5 × 7.5 mm. for the pronotum. Its colour, however, is normal, viz. body black; antennæ,



palps, tarsi and cerci orange. Burmeister's description of "tibiis . . . testaceis" is evidently an error for "tarsis . . . testaceis."

*Hab*: India; Assam; Tenasserim; Cambodia; Java; Borneo.

***Pseudoglomeris flexicollis* Walker.**

*Pseudoglomeris flexicollis* Hanitsch. J., S.B., R.A.S., No. 69, p. 144 (1915).

This species is known by a single specimen, ♂, the type, which was collected by Wallace at Singapore and is now in the Oxford Museum.

The "♀" in Walker's description (Cat. Blatt. Brit. Mus. p. 187) is an obvious misprint for "♂," which error I had unfortunately copied in my former paper.

The measurements are:

♂: Total length 24 mm.; body 22 mm.; pronotum 7 × 9 mm.; tegmina 17 mm.

***Pseudoglomeris planiuscula* Brunner von Wattenwyl.**

*Pseudoglomeris planiuscula* Brunner. Révision Syst. Orth., p. 44 (1893).

*Pseudoglomeris planiuscula* Sauss. and Zehnt. Rev. Suisse Zool. Vol. III., p. 41, pl. I., fig. 14 (1895).

*Pseudoglomeris planiuscula* Kirby. Syn. Cat. Orth. Vol. I., p. 190 (1904).

Brunner: ♀. Atra opaca, dense punctulata. Caput totum atrum, punctatum. Antennæ, palpi et labrum læte ferruginei. Pronotum minus fornicatum, margine non reflexo sed limbato. Pedes nigri. Cerci ferruginei.

♂ differt a specie præcedenti [i.e. *P. fornicata* Brunner] pronoto planiore, alarum ramis venæ ulnaris obliquioribus.

	♂	♀
Long. corporis	15 mm.	19 mm.
Long. pronoti	4 "	5.5 "
Lat. pronoti	6 "	10 "
Long. elytrorum	16 "	—

*Patria*: Carin Chebà; Bhamo; Catcin Cauri; M<sup>t</sup> Mooleyit, 1000–1300 metres.

Saussure and Zehntner reported it from Burma too, and Kirby from Tonkin.—The Oxford Museum has a ♀ specimen from Malacca (Castelneau, 1862), which Shelford had compared with the type.

Genus **DOLICHOSPHAERIA** n.g.

♀. Body elongated, with parallel sides. Anterior femora spined. Claws without arolium. Apterous.

♂. Unknown.

This genus is closely allied to *Gynopeltis* Gerstæcker, from East Africa, which, however, is of a broad elliptical or sub-ovate shape; but these two genera agree by their anterior femora being spined and by the absence of an arolium.

*Glyptopeltis* Saussure, from Java, whilst resembling it by its spined femora, differs from it by the presence of an arolium and by its sub-ovate shape. Other genera of this sub-family distinguished by the absence of an arolium are *Paranauphœta* Brunner and *Gymnonyx* Saussure and Zehntner.

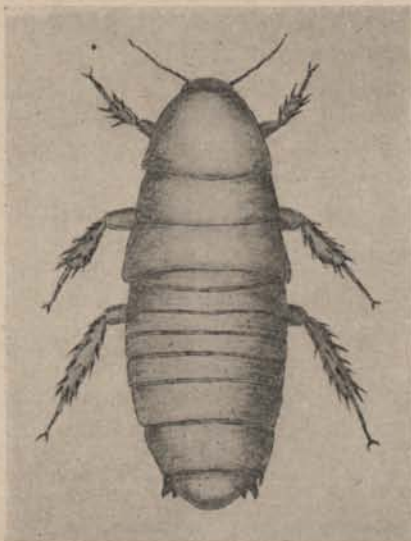
**Dolichosphaeria arcuata** n.sp.

Fig. 31. *Dolichosphaeria arcuata* n.g.  
and sp. ♀  
× 2.

♀. Black, shining. Head partly free, light castaneous, with a darker triangular blotch between the bases of the antennæ. Antennæ fawn coloured, somewhat exceeding the pronotum in length. Pronotum parabolic, faintly punctured; meso- and metanotum distinctly punctured, abdomen still more so. Abdominal tergites with transverse sulcus. The latero-posterior angles of the 6th and 7th tergites with spines. Supra-anal lamina large, with a spine immediately behind each cercus, its posterior margin thickened and raised. Cerci very short, triangular,

shining. Legs castaneous. Anterior femora with two closely placed spines near the middle of the inferior border, and a third spine on the outer aspect of the distal end. Median and posterior femora not armed. A few scattered

setæ on the inferior border of the anterior and median femora, none on the posterior femora. Tibiæ strongly armed, spines in 3 rows. Metatarsus slightly longer than the remaining joints. Claws without arolium. Entirely apterous.

Total length 28 mm. ; greatest width 10.5 mm.

*Hab*: Bukit Timah, Singapore, 300'. One ♀ example (R. Hanitsch, August 1912). Type in the Oxford Museum.

***Dolichosphaeria deplanata* n.sp.**

♀. Black, shining. Head partly free, light castaneous, with a darker band between the bases of the antennæ. (Antennæ missing). Pronotum parabolic, slightly punctured, with a median depression, the posterior border of which is raised into two closely placed tubercles. Meso- and metanotum slightly punctured, abdomen distinctly so. Abdominal tergites with transverse sulcus, the latero-posterior angles of the 6th and 7th tergites drawn out into sharp spines. Supra-anal lamina large, its latero-anterior margin on either side drawn out into a spine, posterior margin thickened and raised. Cerci very short, triangular, shining. Legs castaneous. Anterior femora on the inferior border with a dense row of setæ and with two closely placed spines near the middle of the inferior border, and a third spine on the outer aspect of the distal end. Median femora with a similar row of setæ, but without spines. Posterior femora with neither setæ or spines. Tibiæ strongly armed, spines in 3 rows. Metatarsus slightly longer than the remaining joints. Claws without arolium. Entirely apterous.

♀. Total length 30 mm. ; greatest width 13 mm.

*Hab*: Gunong Kledang, Perak, 2646'. One example ♀. (R. Hanitsch, November 1916). Type in the Oxford Museum.

Differs from *D. arcuata* by the depression on the pronotum, by the greater development of the setæ on the anterior and median femora, and by its larger size.

**Sub-family 11. PANESTHINÆ.**

***Salganea morio* Burmeister.** (Plate XIII, fig. 12).

*Salganea morio* Hanitsch. J., S.B., R.A.S., No. 69, p. 145 (1915);  
Treubia, Vol. III. p. 213 (1923).

The specimen (♀) figured is the one referred to in my former paper and was taken by Mr. J. A. le Doux at Kota Tinggi, Johore, May 1915.

**Salganea rugulata** Saussure.

*Salganea rugulata* Hanitsch. J., S.B., R.A.S., No. 69, p. 146 (1915); J., F.M.S. Museums, Vol. VIII., part 3, p. 70 (1919).

Originally recorded from Java. Since taken by Messrs. Robinson and Kloss at Sungei Kumbang, Korinchi Peak, Sumatra, 4600', April 1914, and by myself on the Malay Peninsula, viz. on Bukit Kutu, 3400', April 1915, and on Kedah Peak, 3000', December 1915.

**Panesthia hilaris** Kirby. (Plate XIII, fig. 13.)

*Panesthia hilaris* Hanitsch. J., S.B., R.A.S.; No. 69, p. 153 (1915).

The specimen (♂) figured is the one referred to in my former paper. I took it at Changi, Singapore, August 1896.

**Panesthia nicobarensis** Saussure.

*Panesthia nicobarensis* Sauss. Rev. Suisse Zool., Vol. III., p. 316 (1895).

*Panesthia nicobarensis* Kirby. Syn. Cat. Orth. Vol. I., p. 203 (1904).

Saussure: Sat magna, nigra. Antennæ basi nigræ, dehinc ferruginæ. Vertex ♂ foveolatus. Pronotum valde excavatum, lævigatum, utrinque sparse punctatum, disco valde bituberculato, area antica granulosa: Margo anterior ♂ quadrato-excisus, angulis rotundatis, productis, reflexis; ♀ transverse excisus, angulis rotundatis, parum productis; margine pone incisuram carinato, ♂ leviter angulato. Elytra truncata, primum abdominis segmentum tegentia; angulo costali rotundato; sulco anali nullo margine costali recto, haud exciso. Abdomen remote parum profunde, modice grosse punctatum. Lamina supra-analis brevissime crenata, dentibus 6 remotis ac utrinque dente majore. Femora antica 2-3 spinosa.

Long. ♀ 42, ♂ 48; pronot. ♀ 12-12.5, ♂ 9.5-10; lat. ♀ 17.5, ♂ 14.5; elytr. ♀ 16, ♂ 13 mm.

Insulæ Nicobarenses.

Pourrait être une variété à élytres tronqués de la *P. javanica* Serv.; cependant les cornes du pronotum ne sont pas arquées en dedans ni pointues comme chez cette espèce, mais arrondies et réfléchies. Chez la femelle l'enclanchure du bord antérieur est bien plus prononcée; les tubercules du disque aussi sont beaucoup plus forts."

**Panesthia saussurii** Stal.

*Panesthia saussurii* Stål. Öfver. K. Vet. Akad. Förh., Vol. XXXIV.  
(No. 10) p. 37 (1877).

*Panesthia saussurei* Saussure. Rev. Suisse Zool. Vol. III., p. 312  
(1895).

*Panesthia saussurei* Kirby. Syn. Cat. Orth. Vol. I., p. 202 (1904).

*Panesthia saussurei* Karny. Suppl. Entom. No. IV., p. 90 (1915).

*Panesthia saussurii* Hanitsch. Trealia, Vol. III., p. 214 (1923).

I had accidentally omitted this widely distributed species in my former paper on "Malayan Blattidæ." Stal's description is as follows :

*P. javanicæ* simillima, sed minor, lateribus pronoti fortius punctatis, elytris antierius punctis subtilibus raris conspersis, abdomine minus dense punctato, angulis apicalibus laminæ supraanalis obtusioribus; femora antica variant inermes, vel spinis duabus vel una armata. ♂ ♀. Long. corp. 26-32 mm.

## Philippines.

Saussure: Sat minuta. *P. javanicæ* Serv. simillima. Vertex ♂ foveolatus. Pronotum ♂ cornigerum, utrinque crasse punctatum, tuberculis disci minimis, granuliformibus. Elytra polita. Abdomen crasse remote punctatum; 7<sup>i</sup> segmenti dentes acuti. Lamina supraanalis crenulis 5, angulis plus minus acutis. Femora antica spinis 1-3. Long. 29; pronot. 6; latit. 8.5; elytr. 24 mm. India orientalis; Sink.

Karny (l.c.) records this species from Formosa, and I have shown (l.c.) that it has a wide distribution, similar to that of *P. javanica*. The Oxford Museum has specimens from Selangor (H. C. Pratt), Borneo (Burr, Shelford), Java, the Philippines, Dutch New Guinea (H. C. Pratt), and New South Wales (J. J. Walker), whilst in the Buitenzorg Museum there are examples from Korintji, Sumatra; Mt. Gedeh, W. Java; Tengger, E. Java; North Borneo; Ceram, and New Guinea. In the same paper I drew attention to the great variation in the number of spines of the anterior femora of this species, viz. from nil to 5, and to these variations occurring not only between different individuals, but, to a less degree, even between the two sides of the same individual.

***Panesthia shelfordi* n.sp.**

♂. Head, antennæ, body and legs entirely black. Tegmina slightly exceeding the abdomen; their proximal half pale testaceous; distal half piceous, with a pale testaceous



Fig. 32. *Panesthia shelfordi* n.sp. ♂  
× 2.

spot near the anterior border, at about two-thirds of the entire distance from the base of the tegmen. Wings: proximal half of the anterior part transparent pale testaceous, distal half piceous; anal portion of wings almost uniform infuscated, but lighter near the base. Anterior femora without spines. Pronotum anteriorly on either side drawn out into horns which bend inwards and embrace in front the head to about one-quarter of its width on either side. Anterior half of the pronotum with a

deep depression, divided by a longitudinal ridge into a left and a right portion; posterior half of the pronotum deeply punctured. Mesonotum, metanotum, and abdomen both above and below, deeply punctured. Supra-anal lamina slightly crenulated.

Total length: ♂: 26 mm.; body 25 mm.; pronotum 6.5 × 9 mm.; tegmina 21 mm.

*Hab*: Mt. Penrissen, Sarawak (R. Shelford, May 1899). One example, ♂. Type in the Oxford Museum.

Nearest to *P. regalis*, Walker, from Assam, but smaller, and differing by the pale testaceous spot in the dark distal half of the tegmina.

**Miopanesthia discoidalis** Saussure.

*Miopanesthia discoidalis* Hanitsch, J., S.B., R.A.S., No. 69, p. 157 (1915).

I provisionally place under this species three specimens, all ♀♀ and all approximately from the same altitude, though from different localities, viz., one ♀ from Kedah Peak, Malay Peninsula, 3000' (December 1915), one ♀ from Bukit Kutu, Selangor, 3000' (April 1915), both collected by myself, and one ♀ from Masarang Mt., North Celebes, 3000'–4000', taken by Charles Hose (October 1895) and now in the Oxford Museum.

The specimen from Kedah Peak may be described as follows: General colour dark castaneous to piceous. Head castaneous, labrum testaceous, antennæ light castaneous. Anterior margin of the pronotum slightly reflected, behind it a triangular depression reaching to the middle of the pronotum, then a protuberance which is smooth and only slightly punctured, whilst the rest of the pronotum is densely punctured. Mesonotum and metanotum smooth, with numerous punctures. First five abdominal segments each with two somewhat irregular transverse rows of punctures, one of which is closely applied to the anterior margin, whilst the other runs across the middle; each segment posteriorly with a sulcus which is perfectly smooth. Sixth abdominal segment with more numerous, coarser and less regularly arranged punctures, its latero-posterior angle drawn out in very short and blunt teeth; seventh abdominal segment darker, almost piceous, about twice as broad as the anterior segments, densely and coarsely punctured, its posterior angles drawn out into sharp teeth, its sides with a slight protuberance just in front of the tooth. Supra-anal lamina almost as broad as the 7th segment, piceous, densely and coarsely punctured, with a large tooth on either side, and between them, occupying the whole posterior margin, a row of 16 small teeth, symmetrically arranged. Legs reddish castaneous, anterior femora unarmed. Legs and underside of the abdomen with a few scattered hairs. Tegmina short, sub-quadrate, reaching only just beyond the metanotum.

Total length 19.5 mm.

The specimen from Bukit Kutu differs from the one just described by the following characters: Less dark in colour, especially the first five abdominal tergites light castaneous;

a slight pubescence at the sides of the first five abdominal tergites, which is much more marked over the whole surface of the 6th and 7th tergites and on the supra-anal lamina. Supra-anal lamina asymmetrical: the large lateral teeth are present, but whilst the left half of the posterior margin bears 10 small teeth, the right half is smooth, possibly a deformity. Otherwise the specimen agrees with the one from Kedah Peak, especially by its unarmed anterior femora and its short tegmina reaching only to the posterior border of the metanotum.

Total length 20 mm.

The Celebes specimen agrees with the one from Kedah in its general colour, though the legs are somewhat darker, and in the almost entire absence of pubescence. It differs from it by the lateral angles of the 6th segment not being drawn out into spines, and by the posterior margin of the supra-anal lamina bearing, in addition to the two large ones, only 10 small teeth which are symmetrical. Its tegmina reach to the end of the 1st abdominal segment. Anterior femora not spined.

Total length 22 mm.

**Dicellonotus monstruosus** Wood-Mason.

*Panesthia monstruosa* W.M., J. As. Soc. Bengal, Vol. XLV. (2), p. 189 (1876); A.M.N.H. (4), Vol. XIX., p. 117 (1877).

*Panesthia monstruosa* Sauss. Rev. Suisse Zool., Vol. III., p. 311 (1895).

*Dicellonotus monstruosus* Kirby. Syn. Cat. Orth. Vol. I., p. 201 (1904).

Wood-Mason: Ingens, aptera, aterrima, nitida. Corpore crassissimo. Tegumento valde indurato. Pronoto in maribus valdissime, in fœminis modice, inæquali et impresso; bituberculato; incisura profunda, lata, medio recta et linea elevata marginata, lateribus cornigera, cornubus in mare magnis, in femina modicis, reflexis, apice plicatis. Abdominis segmentis basalibus infraque supraque sparsim minute punctatis, ultimo laminaque supraanali punctis crebrioribus necnon grandioribus conspersis hac postice 5-dentata. Pedibus validis, spinis tibialibus fortibus armatis; femoribus anticis trispinosis. Long. corporis maris 58 mm.; pronoti  $14\frac{1}{3}$ , pronoti lat.  $19\frac{1}{3}$ , incisuræ lat. 6; mesonoti long. 9, mesonoti lat.  $21\frac{2}{3}$ ; metanoti



long. 8, metanoti lat. 23; abdom. long. 30, abd. lat. (ad medium) 23. Long. corp. fem. 52.

*Hab*: A male and a female from Southern India (R. C. Beddome).

Wood-Mason adds: "This fine insect offers a curious resemblance to the *Gromphadorhina portentosa* Schaum, from Madagascar." However, the resemblance is only a superficial one, as the latter species belongs to the *Perispærinæ*.

Saussure (loc. cit.), in re-describing *D. monstruosus*, gives as additional locality "Singapore" (Geneva Museum). He adds that the tubercles of the disk much resemble those of *Salganea morio*, whilst the rugosities of the abdomen recall those of *P. stellata* Sauss., from Sikkim.

## Geographical Distribution of the Malayan Species of Blattidæ.

The following table is a list of the Blattidæ so far described from the Malayan sub-region, a total of 234 species, representing an increase of 50 species as compared with my former list. Of these, 116 species have been recorded from the Malay Peninsula, 115 from Borneo, 76 from Java and only 38 from Sumatra, whilst not less than 170 species seem to be peculiar to this sub-region. Extensive material which reached me from the Raffles Museum, from the F. M. S. Museums, from Sarawak and Buitenzorg whilst this paper was nearing completion and which could not be incorporated, will, no doubt, add considerably to the number of species, and equalize somewhat the proportion of the forms known from the four great divisions of this sub-region.

The first two columns of the table give the references to the pages in this and the former paper in which the descriptions are found.

I.	II.		Malay Peninsula.	Sumatra.	Java.	Borneo.	Other localities.
Sub-family I. ECTOBINÆ.							
26	395	<i>Theganopteryx apicigera</i> Walker	×	×	×	×	
27		<i>Hemithyrsocera histrio</i> Burm.	×	×	×	×	Celebes.
28	395	<i>lateralis</i> Walker	×	×			India; Burma; Siar
28	395	<i>palliata</i> Fab.	×	×			Ceylon; India; Indo- China; China.
	396	<i>ridleyi</i> Shelf.	×				
29	396	<i>soror</i> Brunner	×		×	/	Celebes.
29		<i>tessellata</i> Rehn	×				
32		<i>Anaplecta borneensis</i> Shelf.			×	×	
32		<i>javanica</i> Sauss.			×		
31		<i>malayensis</i> Shelf.	×				
31		<i>obscura</i> Shelf.	×				
	396	<i>vittata</i> n. sp.	×				

I.	II.	Malay Peninsula.	Sumatra.	Java.	Borneo.	Other localities.
Sub-family 2. PHYLLODROMIINÆ.						
36	<i>Pseudothyrocera bicolor</i> Shelf.				×	
35	" <i>montana</i> Shelf.				×	
36	" <i>moultoni</i> Hanitsch.				×	
34	" <i>pica</i> Walker	×	×			
35	" <i>ruficollis</i> Shelf.	×			×	
34	397 " <i>scutigera</i> Walker	×			×	
38	398 <i>Ischnoptera cavernicola</i> Shelf.				×	
38	" <i>excavata</i> Shelf.				×	
	398 " <i>indica</i> Brunner	×				
39	" <i>montis</i> Shelf.				×	
37	398 " <i>reversa</i> Walker	×				
39	" <i>ridleyi</i> Shelf.	×				
	399 <i>Phyllodromia abrupta</i> n. sp.	×				
	400 " <i>adversa</i> S. and Z.			×		
44	" <i>aliena</i> Brunner	×				Burma.
	400 " <i>ampletens</i> Walker	×				Morty.
50	" <i>anceps</i> Krauss			×		
40	" <i>bivittata</i> Serville	?	?	?	×	Cosmopolitan.
	402 " <i>castanea</i> Brunner				×	
45	402 " <i>contingens</i> Walker	×		×	×	
	403 " <i>curvinervis</i> S. and Z.			×		Burma.
	404 " <i>diagrammatica</i> Hanitsch.	×				
55	" <i>elegans</i> Walker				×	
43	" <i>funebris</i> Walker				×	
45	" <i>germanica</i> L.	×	×	×	×	Cosmopolitan.
43	406 " <i>hamifera</i> Walker	×			×	
54	" <i>hewitti</i> Shelford				×	
46	" <i>irregulariter-vittata</i> Brunner.			×	×	
41	406 " <i>laterifera</i> Walker	×			×	
42	407 " <i>latius-vittata</i> Brunner	×		×		Celebes.
42	" <i>longe-alata</i> Brunner				×	
	407 " <i>luteo-marginata</i> n. sp.	×				
53	" <i>marmorata</i> Walker	×				
52	" <i>megaspila</i> Walker			×	×	
	408 " <i>molesta</i> Brunner			×		
51	409 " <i>nebulosa</i> Shelford				×	
	" <i>nigrocincta</i> Chopard	×				
57	410 " <i>nimbata</i> Shelford	×			×	
	" <i>nitens</i> Brunner				×	
	410 " <i>nodosa</i> Fritze			×		
49	411 " <i>notulata</i> Stål	×		×	×	Cocos Keeling I.; Tahiti.
51	" <i>obtusifrons</i> Walker				×	
55	" <i>picteti</i> Fritze			×		
54	" <i>picturata</i> Shelford				×	
49	411 " <i>polygrapha</i> Walker	×			×	Siam.
49	" <i>puncticollis</i> Brunner				×	
	" <i>quadri-punctata</i> Hanitsch	×				
57	411 " <i>rectangulariter-vittata</i> Brunner				×	
	412 " <i>rubro-nigra</i> n. sp.	×				

I.	II.	Malay Peninsula.	Sumatra	Java.	Borneo.	Other localities.
44	<i>Phyllodromia ruficeps</i> Kirby	×				S. Africa.
46	" <i>secura</i> Krauss			×		
413	" <i>stellata</i> n. sp.	×				
413	" <i>subgenitalis</i> Fritze.		×			
56	" <i>supellectilium</i> Serville	?	?	?	?	Christmas I.; Cosmopolitan.
414	" <i>terminalis</i> Brunner				×	
41	" <i>triangulariter-vittata</i> Brunner				×	
48	" <i>variegata</i> Brunner			×		
414	" <i>vilis</i> Brunner	×				Formosa.
47	" <i>virescens</i> Walker	×			×	
416	<i>Liosilpha lata</i> n. sp.	×			×	Ceylon.
417	" <i>longe-alata</i> n. sp.			×		
417	" <i>picea</i> n. sp.				×	
58	<i>Duryodana palpalis</i> Walker				×	
60	417 <i>Pseudophyllodromia laticeps</i> Walk.	×	×		×	
59	" <i>pulcherrima</i> Shelf				×	
418	" <i>sex-punctata</i> n. sp.	×				
62	<i>Ceratinoptera fulva</i> Brunner			×		
419	" <i>klossi</i> Hanitsch		×			
62	" <i>sundaica</i> Fritze			×		
63	<i>Allacta parva</i> Shelf.				×	
420	" <i>sinilis</i> Saussure					Cocos Keeling I.; Hawaii.
Sub-family 3. NYCTIBORINÆ.						
None.						
Sub-family 4. EPILAMPRINÆ.						
64	<i>Phlebototus pallens</i> Serville			×		Ceylon; Bengal; Assam.
66	422 <i>Morphna badia</i> Brunner	×	×			Nias; Peninsular Siam.
420	" <i>dotata</i> Walker	×			×	Peninsular Siam.
65	" <i>maculata</i> Brunner	×		?	×	
67	423 <i>Homalopteryx adusta</i> Walker	×		×	×	
67	" <i>major</i> Saussure			×		
68	<i>Compsolampra liturata</i> Serville			×		China.
71	424 <i>Apsidopis cyclops</i> Saussure				×	
70	424 " <i>oxyptera</i> Walker	×			×	
69	" <i>wallacei</i> Shelford				×	
424	<i>Pseudophoraspis emarginata</i> n. sp.				×	
73	" <i>miranda</i> Shelford				×	
72	425 " <i>nebulosa</i> Burm.	×	×	×	×	
73	<i>Rhabdoblatta buqueti</i> Serville			×		
74	" <i>javanica</i> Saussure			×		
77	426 " <i>oblecta</i> Hanitsch	×				
76	" <i>parvicollis</i> Walker				×	
75	426 " <i>pfeiferæ</i> Brunner	×	×		×	
77	426 " <i>procera</i> Brunner		×	×	×	Nias.
75	" <i>structilis</i> Rehn.		×			

I.	II.	Malay Peninsula.	Sumatra.	Java.	Borneo.	Other localities.
88	<i>Epilampra albina</i> Saussure.			×		
427	.. <i>angusta</i> Hanitsch.			×		
84	.. <i>circumdata</i> Hanitsch	×				
86	.. <i>deflexa</i> Saussure			×		
428	.. <i>doleschali</i> Brunner				×	
82	.. <i>dytiscoides</i> Hanitsch	×				
84	.. <i>flavomarginata</i> Shelf.				×	
427	.. <i>funebis</i> n. sp.				×	
87	.. <i>geminata</i> Brunner				×	
83	.. <i>goliath</i> Shelford				×	
82	.. <i>imitans</i> Brunner	?				Tenasserim.
85	.. <i>inclarata</i> Walker				×	
89	.. <i>lævicollis</i> Saussure			×		
85	429 .. <i>lurida</i> Burm.		×	×	×	India ; Celebes.
430	.. <i>lyrata</i> n. sp.	×				
91	.. <i>moloch</i> Rehn	×				
429	.. <i>moultoni</i> n. sp.				×	
79	430 .. <i>plena</i> Walker	×			×	Celebes ; N. Guinea
80	431 .. <i>puncticollis</i> Walker	×			×	
78	.. <i>quadrinotata</i> Walker				×	
86	.. <i>ridleyi</i> Kirby	×				
83	431 .. <i>saravacensis</i> Shelford	×			×	
89	.. <i>trongana</i> Rehn	×				
81	.. <i>varia</i> Walker				×	
94	<i>Rhicnoda desidiosa</i> Rehn	×				
93	.. <i>natatrix</i> Shelford				×	
93	.. <i>rugosa</i> Brunner	×	×	×	×	Pegu ; Tenasserim ; Halmahera.
94	.. <i>spinulosa</i> Brunner			×		
432	<i>Calolampra limbata</i> n. sp.	×				
433	.. <i>nitida</i> n. sp.				×	
96	433 .. <i>pedisequa</i> Rehn.	×				
Sub-family 5. BLATTINÆ.						
98	<i>Platyzosteria soror</i> Brunner	×			×	Formosa ; Amboina etc.
99	432 <i>Cutilia nitida</i> Brunner	×		×	×	Formosa ; Philip- pines ; Amboina ; Ternate ; Ceram ; N. Guinea ; Solo- mon I., N. S. Wales.
434	<i>Methana dacrydii</i> n. sp.	×				
101	.. <i>hosei</i> Shelford				×	
100	.. <i>magna</i> Shelford				×	
100	434 .. <i>pallipalpis</i> Serville	×	×	×	×	Ceram ; Talaut ; Australia.
435	.. <i>saundersi</i> n. sp.	×				
101	436 .. <i>semimarginalis</i> Hanitsch				×	
102	437 <i>Dorylæa flavicincta</i> De Haan	×	×	×	×	Madagascar ; For- mosa.
104	<i>Platta concinna</i> De Haan	×		×		Honkong ; Japan ; Australia.
103	.. <i>orientalis</i> L.	×	×	×	×	Cosmopolitan.

I.	II.		Malay Peninsula.	Sumatra.	Java.	Borneo.	Other localities.
	441	<i>Scabina horrida</i> Hanitsch.				×	
106	436	<i>Stylopyga picea</i> Brunner	×		×	×	Nicobars ; Lower Siam.
107		„ <i>proposita</i> Shelford			×		
105		„ <i>rhombifolia</i> Stoll	×		×	×	Cosmopolitan.
106		„ <i>semoni</i> Krauss			×		
108		<i>Periplaneta americana</i> L.	×	×	×	×	Cosmopolitan.
108		„ <i>australasiæ</i> Fab.	×	×	×	×	Cosmopolitan.
	437	„ <i>cavernicola</i> Chopard	×				
109		„ <i>crassa</i> Karny				×	
109	438	„ <i>lata</i> Herbst				×	
110		„ <i>malaica</i> Karny				×	
	440	„ <i>montana</i> n. sp.	×				
110		„ <i>regina</i> Saussure	×				
111		„ <i>robinsoni</i> Hanitsch		×			
109		„ <i>spinosostylata</i> Krauss			×		
111		„ <i>truncata</i> Krauss		×			New Britain ; Brazil ; Cosmopolitan ; Tenerife.
112		„ <i>Homalosilpha decorata</i> Serville				×	
112		„ <i>ustulata</i> Burm.	×	?	×	?	
113		<i>Eroblatta borneensis</i> Shelford				×	
114		<i>Thyrsocera speciosum</i> Walker	?	?	?	?	“ Eastern Archipe- lago.”
114		„ <i>spectabilis</i> Burm.	×				Ceylon ; Nepal.
116		<i>Archiblatta hævenii</i> Vollenhoven	×	×	?	?	
118		<i>Catara minor</i> Krauss			×		
117	442	„ <i>rugosicollis</i> Brunner	×	×	×	×	
	444	<i>Protagonista pertristis</i> n. sp.	×				
Sub-family 6. PANCHLORINÆ.							
120		<i>Rhyparobia maderæ</i> Fab.	?	?	×	?	Cosmopolitan.
122		<i>Leucophaea nigra</i> Brunner		×	×		Burma.
122	445	„ <i>striata</i> Kirby	×				
121		„ <i>surinamensis</i> L.	×	×	×	×	Cosmopolitan.
123		<i>Nauphæta cinerea</i> Olivier	×	×	?	?	Cosmopolitan.
Sub-family 7. BLABERINÆ. None.							
Sub-family 8. CORYDINÆ.							
125		<i>Corydia cærulea</i> Shelford				×	
125	448	„ <i>forceps</i> Hanitsch	×				
126		„ <i>maxwelli</i> Hanitsch	×			×	
124		„ <i>petiveriana</i> L.	?	?	?	?	Ceylon ; India ; “ East Indies.”
127		<i>Homopteroidea nigra</i> Shelford				×	
128	449	<i>Holocompsa debilis</i> Walker	×		×	×	Ceylon.
128		<i>Polyphaga sumatrensis</i> Shelf.		×			
129		<i>Dyscologamia capucina</i> Brunner				×	Tenasserim.
130		„ <i>cesticulata</i> Sauss.	×			×	

I.	II.	Malay Peninsula.	Sumatra.	Java.	Borneo.	Other localities.
	447 <i>Dyscologamia chopardi</i> n. n.	×			×	
131	" <i>pilosa</i> Walker			×		
115	446 <i>Miroblatta petrophila</i> Shelf.				×	
Sub-family 9. OXYHALOINÆ.						
133	449 <i>Diploptera dytiscoides</i> Serville	×			×	Ceylon; Burma; Philippines; Australia, etc.
134	449 <i>Chorisonewra lativitrea</i> Walker	×			×	Cambodia.
136	<i>Areolaria consocia</i> Walker	×				
136	450 " <i>fieberi</i> Brunner	×		×		
135	" <i>signata</i> Shelford				×	
135	" <i>sumatrana</i> Shelford		×			
	451 <i>Prosoplecta dexter-alleni</i> n. sp.	×				
Sub-family 10. PERISPHERINÆ.						
140	<i>Paranauphata atra</i> Shelford		×		×	
138	" <i>basalis</i> Serville	×	×	×		
140	" <i>bilunata</i> De Haan			×		
139	" <i>brunneri</i> Shelford.				×	
138	" <i>circumdata</i> De Haan.		×		×	
140	" <i>javanica</i> Saussure			×		
139	" <i>lyrata</i> Burm.	×	×	×	×	India; Philippines; Celebes.
141	<i>Glyptopeltis biguttata</i> Saussure			×		
141	" <i>couloniana</i> Saussure			?		
142	451 <i>Perisphæria armadillo</i> Serville	×		×		Amboina; Aru; N. Guinea.
	452 " <i>aterrima</i> Herbst			×		
142	" <i>glomeriformis</i> Lucas	×				Cochin China; Philippines.
143	" <i>lucasiana</i> S. and Z.	×		×		
143	452 <i>Pseudoglomeris flavicornis</i> Burm.			×	×	S. India; Assam; Tenasserim; Cambodia.
144	453 " <i>flexicollis</i> Walker	×				
	453 " <i>planiuscula</i> Brunner	×				Burma; Tonkin.
	454 <i>Dolichosphæria arcuata</i> n. sp.	×				
	455 " <i>deplanata</i> n. sp.	×				
Sub-family 11. PANESTHINÆ.						
145	455 <i>Salganea morio</i> Burm.	×	×	×	×	Ceylon; Formosa; Amboina.
146	456 " <i>rugulata</i> Saussure	×	×	×		
149	<i>Panesthia angustipennis</i> Illiger		×		×	Philippines; Amboina.

I.	II.		Malay Peninsula.	Sumatra.	Java.	Borneo.	Other localities.
150		<i>Panesthia biglumis</i> Saussure			?		India ; Sikkim.
156		" <i>bramina</i> Saussure	×				India.
152		" <i>ferruginipes</i> Brunner			×		
153	456	" <i>hilaris</i> Kirby	×			×	
147		" <i>javanica</i> Serville	×	×	×	×	Burma ; Cambodia ; Philippines.
149		" <i>mandarinea</i> Saussure	×			×	China.
	456	" <i>nicobarensis</i> Saussure					Nicobars.
154		" <i>ornata</i> Saussure			×		China ?
151		" <i>polita</i> Krauss			×	×	
148		" <i>ruficeps</i> Kirby				×	Christmas I.
	457	" <i>saussurii</i> Stål	×	×	×	×	Formosa ; Philip- pines ; Ceram ; N. Guinea, N.S. Wales.
	458	" <i>shelfordi</i> n. sp.				×	
155		" <i>sinuata</i> Saussure	×				
154		" <i>transversa</i> Burm.			×		Burma.
152		" <i>wallacei</i> Wood-Mason	×				
157	459	<i>Miopanesthia discoidalis</i> Saussure	×		×		India ; Celebes.
157		" <i>stenotarsis</i> Saussure			×	×	
158		<i>Mylacrina wayi</i> Kirby	×				
	460	<i>Dicellonotus monstruosus</i> W.-M.	×				India.



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(Supplementary to the list published in Journal No. 69, pp. 169-172).

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*Theganopteryx  
apicigera, Wlk.*

3



*Hemithyrsocera  
palliata, Fab.*

2



*Hemithyrsocera  
lateralis, Wlk.*

4



*Pseudophoraspis  
nebulosa, Burm.*

7



*Epilampra  
lurida, Burm.*

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*Rhabdoblatta  
pfeiferæ, Brunner*

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*Epilampra  
puncticollis, Wlk.*

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*Cutilia nitida*,  
Brunner

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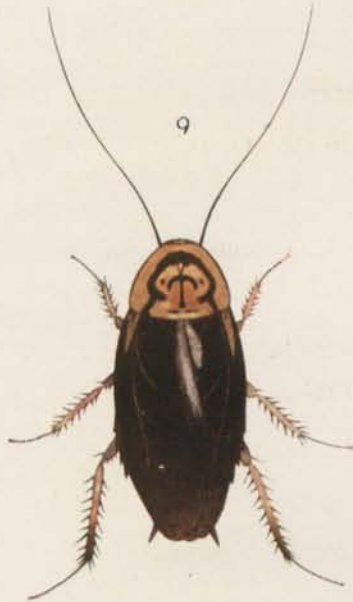
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Burm.

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*Prosoplecta*  
*dexter-alleni*, n. sp.

9



*Methana*  
*dacrydii*, n. sp.

10



*Methana saundersi*,  
n. sp.

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*Panesthia hilaris*,  
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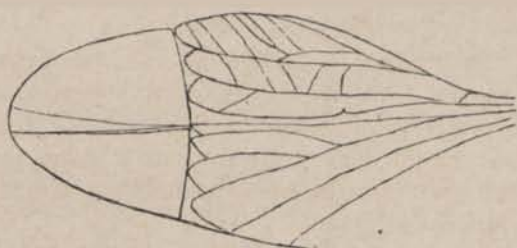


Fig 1. *Anaplecta vittata* n.sp. ♀  
Left wing. × 10.

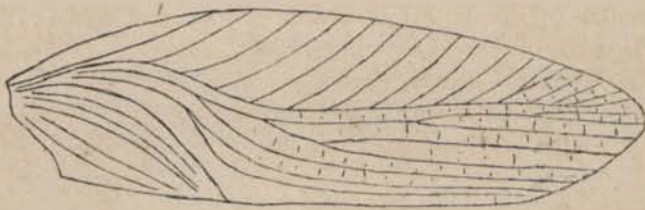


Fig. 2. *Phyllodromia abrupta* n.sp. ♀  
Right tegmen. × 7.

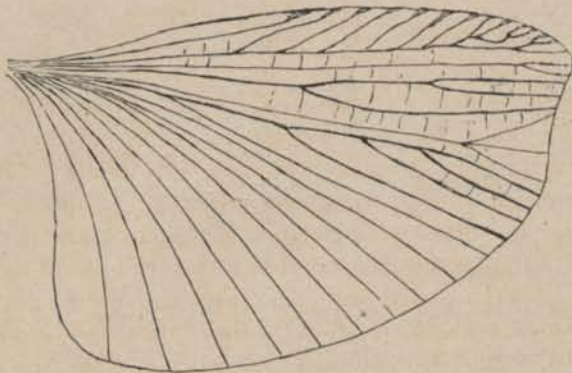


Fig. 3. *Phyllodromia abrupta* n.sp. ♀  
Right wing. × 7.



Fig 4. *Phyllodromia amplexans* Walker. ♂  
Left tegmen. × 7.



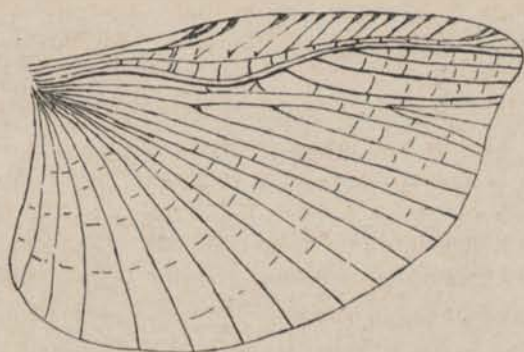


Fig. 5. *Phyllodromia amplexens* Walker. ♂  
Right wing. × 7.



Fig. 6. *Phyllodromia diagrammatica*  
Hanitsch. ♂ × 7.

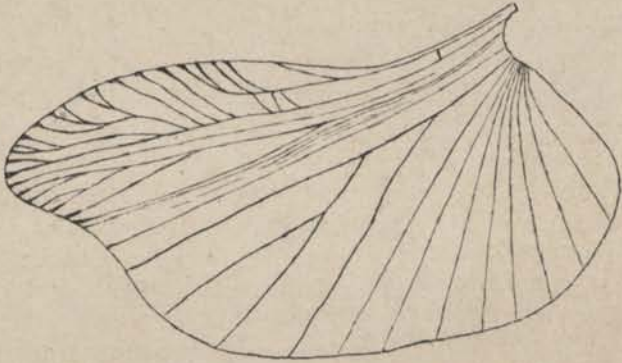


Fig. 7. *Phyllostromia diagrammatica* Hanitsch. ♂  
Left wing. × 7.

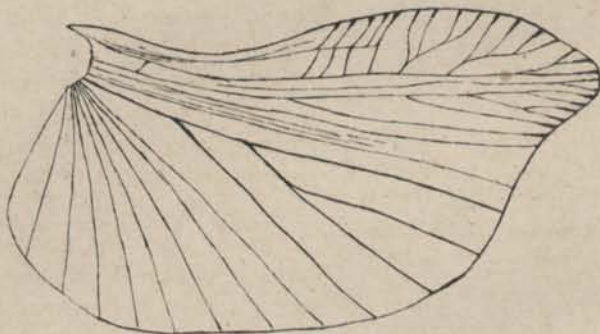


Fig. 8. *Phyllodromia diagrammatica* Hanitsch. ♂  
Right wing. × 7.

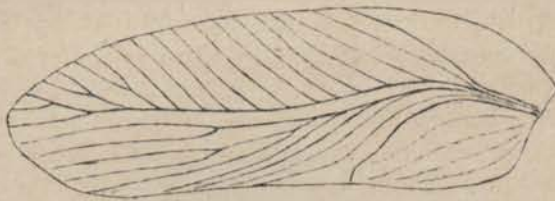


Fig. 9. *Phyllodromia laterifera* Walker. ♂  
Left tegmen. × 5.



Fig. 10. *Phylodromia luteo-marginata* n.sp. ♂  
Right tegmen. × 4.

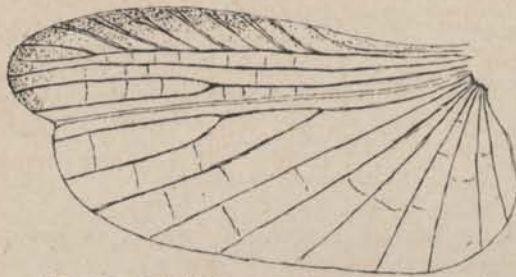


Fig. 11. *Phyllodromia rubro-nigra* n.sp. ♂  
Left wing.  $\times 7$ .

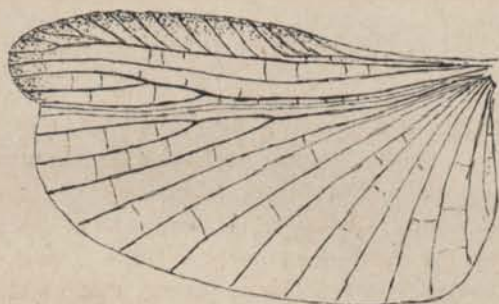


Fig. 12. *Phyllodromia rubro-nigra* n.sp. ♀  
Left wing. × 7.





Fig. 13. *Phyllodromia stellata* n.sp. ♀  
Left tegmen. × 5

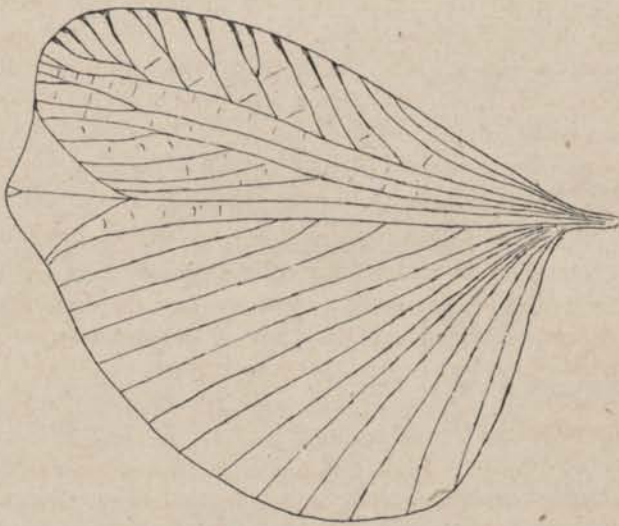


Fig. 14. *Liosilpha lata* n.sp. ♂  
Left wing. × 8.



Fig. 15. *Pseudophyllodromia sex-punctata* n.sp. ♂  
× 5.



Fig. 16. *Pseudophoraspis emarginata* n.sp. ♂  
Apex of left tegmen.

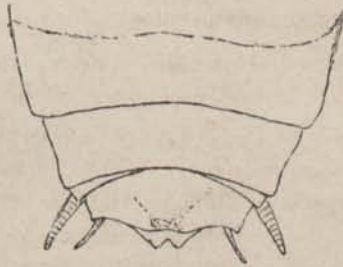


Fig. 17. *Pseudophoraspis emarginata* n.sp. ♂  
End of abdomen. Ventral view.  $\times 3\frac{1}{2}$ .



Fig. 18. *Epilampra angusta* Hanitsch. ♀  
× 1½.

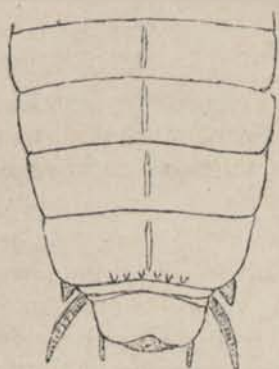


Fig. 19. *Epilampra*  
*moultoni* n.sp. ♂  
End of abdomen.  
Dorsal view. × 4.

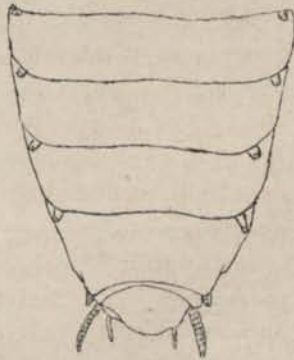


Fig. 20. *Epilampra*  
*moultoni* n.sp. ♂  
End of abdomen.  
Ventral view.  $\times 4$ .

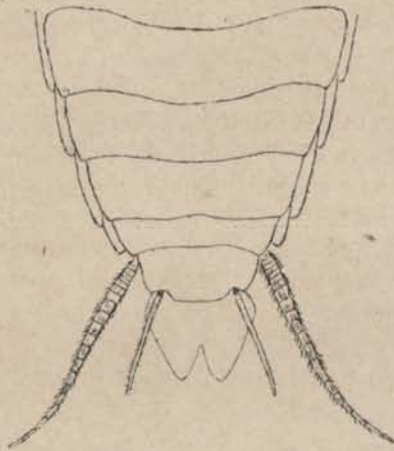


Fig. 21. *Periplaneta americana* L. ♂  
End of abdomen. Ventral view.  $\times 4$ .



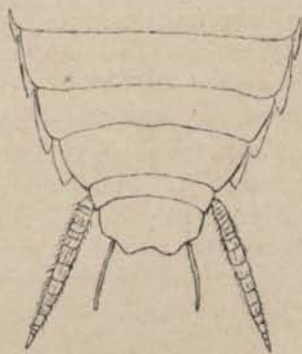


Fig. 22. *Periplaneta australasiae*  
Fab. ♂  
End of abdomen.  
Ventral view.  $\times 4$ .

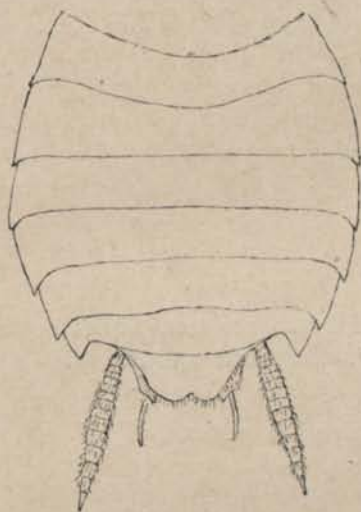


Fig. 23. *Periplaneta lata* Herbst. ♂  
End of abdomen. Dorsal view.  $\times 4$ .

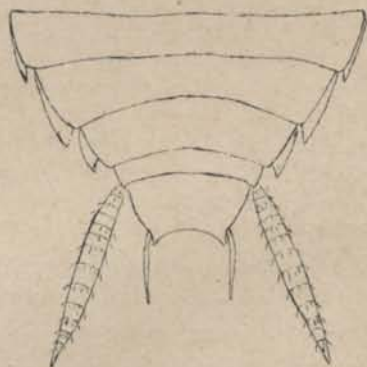


Fig. 24. *Periplaneta lata* Herbst. ♂  
End of abdomen. Ventral view.  $\times 4$ .

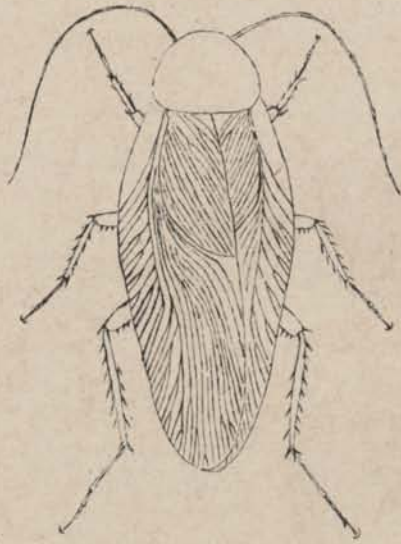


Fig. 25. *Periplaneta montana* n.sp. ♂  
× 24.

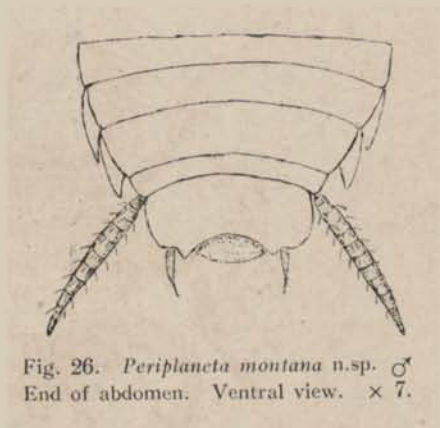


Fig. 26. *Periplaneta montana* n.sp. ♂  
End of abdomen. Ventral view. × 7.

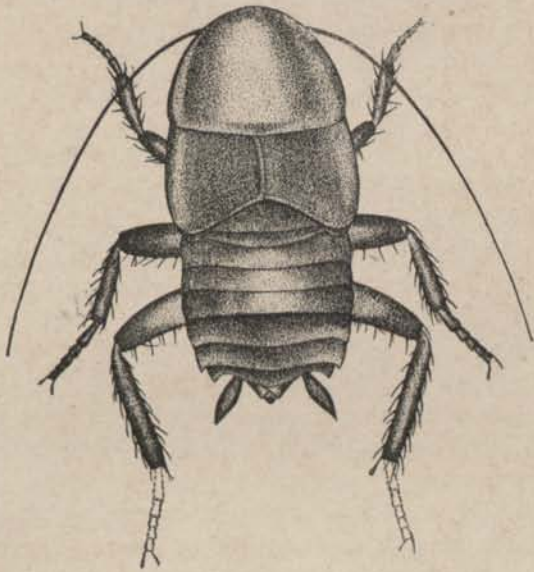


Fig. 27. *Scabina horrida* Hanitsch. ♂  
× 2.



Fig. 28. *Protagonista pertristis* n.sp. ♀  
× 21.

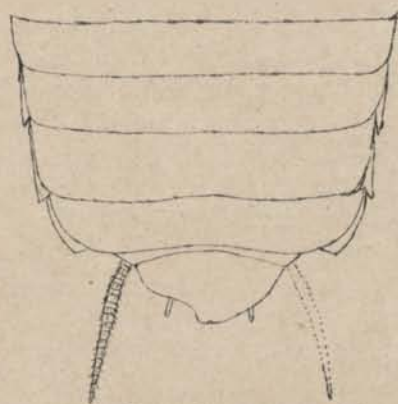


Fig. 29. *Miroblatta petrophila*  
Shelford. ♂  
End of abdomen. Ventral view. × 3.



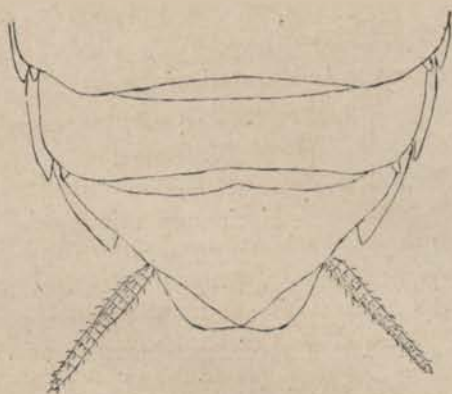


Fig. 30. *Miroblatta petrophila* Shelford. ♀  
End of abdomen. Ventral view.  $\times 3$ .

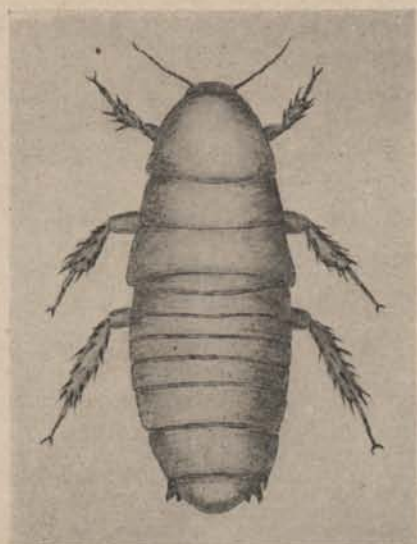


Fig. 31. *Dolichosphæria arcuata* n.g.  
and sp. ♀  
× 2.



Fig. 32. *Panesthia shelfordi* n.sp. ♂  
× 2.

1



*Theganopteryx  
apicigera, Wlk.*

3



*Hemithyrsocera  
palliata, Fab.*

2



*Hemithyrsocera  
lateralis, Wlk.*

4



*Pseudophoraspis  
nebulosa, Burm.*

7



*Epilampra  
lurida, Burm.*

5



*Rhabdoblatta  
pfeiferæ, Brunner*

6



*Epilampra  
puncticollis, Wlk.*

8



*Cutilia nitida,*  
*Brunner*

12



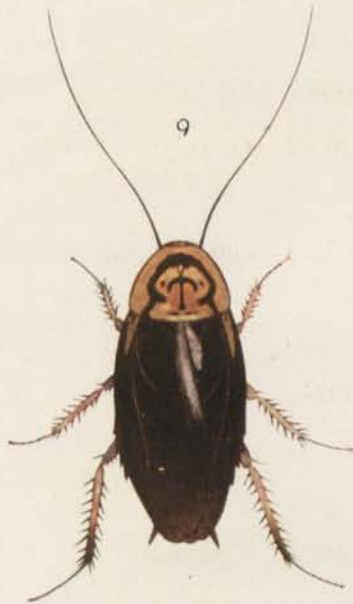
*Salganea morio,*  
*Burm.*

11



*Prosoplecta*  
*dexter-alleni, n. sp.*

9



*Methana*  
*dacrydii, n. sp.*

10



*Methana saundersi,*  
*n. sp.*

13



*Panesthia hilaris,*  
*Kirby.*