

NOTES ON *SPHINGIDAE*, WITH DESCRIPTIONS OF NEW SPECIES.

By THE HON. WALTER ROTHSCHILD.

(Pl. V., VI., VII.)

HAVING just completed arranging the *Sphingidae* in the Tring Museum, in which arrangement I employed Mr. Kirby's catalogue of *Heterocera*, I find I have the following notes to make, and 77 (seventy-seven) new species to describe.

Mr. Kirby enumerates 913 species in his catalogue. Of many of these I can give no opinion, not having seen specimens, but out of these 913 species 52 (fifty-two) are certainly either bad species or only local subspecies, so that 861 species are left, which, together with the 77 (seventy-seven) new ones I am describing, makes a total of 938 species. The collection at Tring contains 623 species, represented by about 4550 specimens, and in addition to the types of the species described in this paper, possesses the types of the following :—

Cephonodes venata (Feld.).	Theretra anubus (Cram.).
„ woodfordi Butl.	„ hystrix (Feld.).
Hemaris pelagus (Cram.) = synonym of H. thysbe (Fabr.).	Metopsilus fusimacula (Feld.).
Macroglossa pylene Feld.	Ampelophaga dolichoides (Feld.).
„ melvus Feld. = synonym of M. milvus (Boisd.).	Deilephila daucus (Cram.) = synonym of D. lineata (Fabr.).
Macroglossa rectifascia Feld.	Pholus crantor (Cram.) = synonym of Ph. achemon (Drury).
Stenolophia tenebrosa Feld. = synonym of S. restituta (Walk.).	Argeus phorbis (Cram.).
Pachygonia magna (Feld.).	Daphnis angustans (Feld.).
Amphion nessus (Cram.).	„ protrudens (Feld.).
Lophuron pusillum (Feld.).	Everyx myron (Cram.).
Cornipalpus succinctus Feld. = synonym of Unzela japix (Cram.).	„ choerilus (Cram.).
Triptogon danum (Cram.) = synonym of T. ocypte (Linn.).	Ambulyx tigrina Feld.
Triptogon fegeus (Cram.).	„ subocellata Feld.
„ camertus (Cram.).	„ eurysthenes Feld.
„ lyctus (Cram.).	Nyceryx hyposticta (Feld.).
Tylognathus scriptor Feld. = synonym of Aleuron prominens (Walk.).	Eurypteryx molucca (Feld.).
Aleuron smerinthoides (Feld.).	Nephele morpheus (Cram.) = synonym of N. didyma Fabr.
„ philampeloides (Feld.).	Cocytius medor (Stoll) = synonym of C. hydaspus (Cram.).
Hemeroplanes triptolemus (Cram.).	Cocytius cluentius (Cram.).
„ oiclus (Cram.).	Phlegethontius hannibal (Stoll).
Theretra aeson (Cram.).	Sphinx lanceolata Feld.
„ cajus (Cram.).	Gargantua gordius (Stoll).
„ drancus (Cram.).	Phryxus caicus (Cram.).
	Leucophlebia heuglini (Feld.).

MACROGLOSSINAE.

In the genus *Hemaris*, *H. pyramus* (Boisd.) sinks as a synonym of *H. ruficaudis* (Kirby), for on comparing specimens and the two descriptions carefully I find they agree almost exactly.

In *Cephanodes*, I am forced to reduce *C. apus* (Boisd.), *C. virescens* (Wallengr.), and *C. confinis* (Boisd.) to the rank of subspecies only, for not only do they agree with *C. hylas* (Linn.) in having white legs, palpi, and under surface of thorax, but there occur in different parts of Africa all the intermediate grades between these three forms, as well as between them and *C. hylas* (Linn.), which itself also occurs on the mainland of Africa.

***Cephanodes lifuensis* sp. nov.**

Stands exactly intermediate between *C. woodfordi* Butl. and *C. bucklandi* Butl., but is much smaller. *Wings* similar to those of *C. bucklandi* Butl., while the markings of the *head*, *thorax*, and *abdomen* are exactly like in *C. woodfordi* Butl., only with the addition of a white band on the second abdominal segment. Under-side of head, thorax, legs, and palpi, lemon yellow; underside of abdomen, uniform maroon red.

Expanse, 2.25 inches = 57.3 millim.

Hab. Lifu, Loyalty Islands.

***Cephanodes simplex* sp. nov.**

(Pl. V., fig. 1.)

Wings identical with those of *C. hylas* (Linn.).

Head and *thorax* dark olive green; *abdomen*, russet orange, anal tuft black with orange centre. Whole under surface of *head*, *thorax*, and *abdomen* deep orange yellow, as are also the legs and palpi.

Expanse, 2 inches = 51 millim.

Hab. Lifu, Loyalty Islands.

This species is not closely allied to any other of the genus.

In the genus *Macroglossa* *M. melvus* Feld. (in coll.) is a synonym of *M. melvus* Boisd. Mr. Kirby has no mention of *M. melvus* Feld., either as a synonym or as a species. The extreme variation to be found in *M. errans* Walk. is very remarkable. In a series I have just received from Mackay, Queensland, 64 in number, no two are alike; in some the transverse bands are wanting, in others broken up into spots, and lastly in some these bands are nearly double the usual width.

***Macroglossa kiushiensis* sp. nov.**

This magnificent species is nearly allied to *M. rectifascia* (Feld.) and *M. sagra* Butl., but is larger and more distinctly marked.

Forewings blackish grey with a large subcostal patch of lighter grey, running back from the apex to about one-third the length and about two-thirds the width of the wing. Two broad black bars cross the forewings, enclosing a band of pale grey; the inner bar is very conspicuous and sharply defined, but the outer one is somewhat clouded and indistinct. Several thin and irregular zigzag lines cross the disc of the wings. *Hindwings* black, crossed by a band of bright orange yellow from the centre of the inner margin to the anal angle. *Head* and *thorax* dark grey, with a central narrow black line and two large triangular black patches running up from the base of the wings.

Abdomen dark grey, with a very large black anal tuft and four large lateral tufts of the same colour, but tipped with yellow. On each side of the first

abdominal segment is a small orange-coloured dot, and on both sides of the second and third segments are large round patches of bright orange.

Expanse, 2.5 inches = 63.75 millim.

Hab. Kiushiu, South Japan.

***Macroglossa loochooana* sp. nov.**

Very near to *M. passalus* (Drury).

Forewings deep greyish black instead of maroon brown, as in that species. Basal third crossed by an <-shaped band, instead of being wholly black. Central band pale grey instead of brownish pink.

Apical patch dark grey bordered with black instead of brown, bordered with a zigzag black line.

Hindwings yellow, with black base, and a much wider and more convex black border than in *M. passalus* (Drury).

Head, thorax, and abdomen greyish brown, with four orange abdominal lateral spots, and a black anal tuft.

Expanse, 2 inches = 51 millim.

Hab. Loochoo Islands.

***Macroglossa moluccensis* sp. nov.**

Nearest to *M. fulvicaudata* Butl., but differs from it in having the *forewings* more uniform brown and crossed by fewer of the indistinct pale lines so conspicuous in that species. The *hindwings* are much more yellow in colour and have the black basal spot and outer border much narrower and more sharply defined than in *M. fulvicaudata* Butl. Also the abdominal orange lateral spots are smaller and the anal tuft is black, with a narrow orange border instead of being wholly of a fiery orange, as in *M. fulvicaudata* Butl.

Expanse, 2 inches to 2.5 = 51 millim. to 63.75.

Hab. New Guinea, the Moluccas, Lifu, etc.

***Macroglossa lifuensis* sp. nov.**

Nearest to *M. errans* Walk., but the ground colour of the *forewings* is a much darker grey, and the zigzag marks are less numerous, and almost obliterated. Apical patch black. Basal third crossed by a more indistinct black curved bar, and the central silvery grey band is duller in colour and much more contracted in the centre, which gives it an hour-glass shape, while in *M. errans* Walk. it forms either a straight band or two spots, and is sometimes absent altogether. The *hindwings* have a much broader black border, and the *head, thorax, and abdomen* are almost uniform greyish black, instead of silvery grey, as in *M. errans* Walk.

Expanse, 2 inches = 51 millim.

Hab. Lifu, Loyalty Islands.

***Macroglossa dohertyi* sp. nov.**

(Pl. V., fig. 2.)

This very fine insect resembles nothing I have ever seen or heard of.

Forewings chocolate brown, crossed by two dirty white transverse bands, and with a brownish orange subapical round spot. *Hindwings* orange with a black border.

Head and *thorax* brownish dun, or yellowish grey. *Abdomen* brown, with two lateral orange spots, and a large anal tuft of a creamy buff colour.

Expanse, 2 inches = 51 millim.

Hab. Amboyna (coll. W. Doherty).

Macroglossa pseudogyrans sp. nov.

(Pl. V., fig. 23.)

This species is the nearest ally of *M. gyrans* Walk., but can at a glance be distinguished from it by the absence of the conspicuous white patch on the sixth and seventh segments of the abdomen possessed by that species. It also is distinguished by the absence of all the faint, hair-like, zigzag, transverse lines, which are present on the forewings of *M. gyrans* Walk., the *forewings* in the new species being uniform dark brown, slightly marked with greyish brown regular bands. In *M. gyrans* Walk. the *hindwings* are deep rufous, gradually shading into chocolate brown towards the margins of the wings, while in the present species the *hindwings* are deep brown with a central band of olivaceous orange.

In *M. gyrans* Walk. the sides of the three first abdominal segments are marked by a confluent rufous brown patch, while in *M. pseudogyrans* each of the first four segments of the abdomen has a separate round bright orange spot on each side.

Expanse, 1.5 inches = 37.75 millim.

Hab. Dili, Flores (coll. W. Doherty).

Macroglossa burmanica sp. nov.

(Pl. V., fig. 3.)

Differs from its nearest ally *M. fervens* Butl. in having only the basal half of the hindwings bright rufous, the outer half gradually shading off into deep brown to the outer margin.

The *forewings* also differ in being uniform greyish brown, crossed by four thin, zigzag, black lines, and in having a single black subapical dot.

Head and *thorax* deep brown.

Abdomen brown, with the sides of the first three segments orange; last segment before the anal one white; anal tuft very large and deep black.

Expanse, 1.25 inches = 31.8 millim.

Hab. Burmah.

Macroglossa similis sp. nov.

Similar to the last, but with *forewings* without markings, and uniform brown, slightly clouded with grey. *Hindwings* olivaceous orange with a broad, rufous-brown border.

Abdomen without the white segment and with two rufous patches on each side.

Expanse, 1.375 inches = 35 millim.

Hab. Oinainissa (coll. W. Doherty).

Macroglossa inconspicua sp. nov.

Similar to *M. lifuensis* Rothsch., but has the *forewings* more uniform brown, only very slightly shaded with grey. The *hindwings* have, moreover, a much narrower black border, and the *abdomen* is very pale grey.

Expanse, 2.25 inches = 57.4 millim.

Hab. Humboldt Bay, N. New Guinea (coll. W. Doherty).

HYPAEDALIA.

At last a second species of this extraordinary genus has been discovered, and even more bizarre than *H. insignis* Butl.

Hypaedia butleri sp. nov.

(Pl. VI., fig. 4.)

Forewings black, crossed by seven irregular, narrow, and zigzag transverse lines. Apical third, irregularly blotched with dirty brown between the three outer transverse lines.

Hindwings blackish chocolate.

Head and *thorax* olive green.

Abdomen olive brown.

Expanse, 3 inches = 76.5 millim.

Hab. Aburi, West Africa ; named in honour of Dr. A. G. Butler.

STENOLOPHIA.

Stenolophia is a genus founded by Felder in the *Reise der Novara Lep.*, iv., t. 82, f. 3 (1874), on a single specimen. From the drawing no one possibly could identify the insect, but I find on examination that the type is a very damaged specimen of the dark variety of *Perigonia restituta* (Walk.), much patched and painted up. Therefore it must stand as

Stenolophia restituta (Walk.).

PERIGONIA.

I have to describe the following species :

Perigonia jamaicensis sp. nov.

Similar to *P. lusca* (Fabr.), but has several well-marked points of difference.

Forewings crossed by a very wide and distinct dark brown bar, while in *P. lusca* (Fabr.) the wings are uniform greyish brown, crossed by seven faint zigzag, hairlike lines.

Hindwings differ in having a much larger and paler grey patch near the anal angle, and the yellow spot at the angle very distinct.

Expanse, 2.25 inches = 57.9 millim.

Hab. Jamaica.

Of the genus *Pterogon* I have two new species to describe.

Pterogon clementsi sp. nov.

Near to *P. obscurus* Mab., but differs in its smaller size and more indistinct pattern and colour.

Forewings brownish grey on basal two-thirds of the wings, crossed and marked by a large number of partly obliterated spots and streaks. Apical third separated from the basal portion of the forewings by an oblique chocolate band, and is of a brownish ochre colour, with a broad pinkish brown border and a subapical round spot of chocolate brown.

Hindwings reddish ochre, crossed by two darker zigzag lines and with a heavy brown border. Whole body brownish grey.

Expanse, 1·5 inches = 38·25 millim.

Hab. Sierra Leone.

Named in honour of Dr. Clements, who has done so much for our knowledge of Sierra Leone entomology.

***Pterogon lasti* sp. nov.**

(Pl. V., fig. 5.)

Forewings deep brownish grey; basal two-thirds marked with three or four narrow, darker, transverse lines. Apical third is separated from this basal portion by a large transverse black V-shaped mark. This apical third is pale grey, slightly clouded with darker grey.

Hindwings orange, with a submarginal band of chestnut red and a heavy black border.

Whole body reddish brown.

Expanse, 1·5 inches = 38·25 millim.

Hab. South-west Madagascar (coll. Last).

***Cypa olivacea* sp. nov.**

(Pl. VII., figs. 6 ♀—6a ♂.)

This species is the most distinct as well as the largest of the genus.

MALE.—*Forewings* olive brown on the basal two-thirds of the wings, crossed by three irregular transverse bars of a dirty buff colour; apical third dirty buff crossed by two zigzag bars of olive brown, and profusely vermiculated with a mass of tiny dots of the same colour.

Hindwings deep olive brown, slightly flushed with rufous.

Head and *thorax* brownish olive.

Abdomen rufous.

FEMALE.—*Forewings* uniform olivaceous buff, with only slight indications of the pattern as seen in the male; apical third of the forewings profusely freckled with minute black specks.

Hindwings brown.

Body rufous.

Expanse: *male*, 2·5 inches = 63·75 millim.; *female*, 3·5 inches = 89·25 millim.

Hab. Borneo (and Sikkim, *vide* Feld.).

One of my specimens was collected by Mr. Cator in Central North Borneo, and the female was in Felder's collection without a name.

LOPHURON.

I have five new species of the genus *Lophuron* to describe.

***Lophuron pulcherrimum* sp. nov.**

Forewings: ground colour silvery grey; near the base a small round brown spot. The wings are crossed by two wide greyish brown transverse bands, and between them a hairlike, blackish grey line. Halfway between the outer brown band and the apex there is a large black spot just below and reaching to the costa.

The outer margin is strongly scalloped, and there is a pale brown patch running from the margin into the wing; fringes dark brown. At the angle of the inner margin there is also a dark brown patch.

Hindwings rosy salmon red, with white fringes, and an extra large grey and black obsolete ocellus at the anal angle.

Head and body silvery grey, with a rufous brown dorsal line down the centre.

Expanse, 2 inches = 51 millim.

Hab. Namaqualand.

Lophuron maculatum sp. nov.

Forewings chocolate grey, with a black stigma with whitish centre in the cell. Just in front of the cell is a large dark chocolate wedge-shaped patch running from the costa to almost the centre of the wing. Almost touching the apex is a smaller chocolate patch, and running from the outer margin to the cell is a broad bar of pale chocolate. Across the wing run five hairlike, half-obliterated transverse lines.

Hindwings greyish chocolate, with a dark grey border and a narrow, dark grey submarginal band across the wings.

Head, thorax, and abdomen dark rosy grey.

Expanse, 2.25 inches = 57.4 millim.

Hab. Natal.

Lophuron magnificum sp. nov.

(Pl. V., fig. 7.)

Forewings pale grey, with a triangular dark olive patch near the centre of the wings, and running from the costa almost the entire width of the wing; in the centre of this patch is a white dot.

There are two indistinct zigzag lines of deep brown crossing the forewings transversely near the base, and three oblong olive patches, more or less defined, along the inner margin.

Hindwings base brilliant yellow, remainder cinnabar red, with a large grey patch at the anal angle crossed by three black bars.

Underside: forewings grey, basal half-orange, and a large black blotch in cell, with a white spot in centre. *Hindwings* grey, with white dot in centre.

Head grey, *thorax* greyish olive, with pale grey centre.

Abdomen grey, with three dorsal longitudinal rows of indistinct olivaceous dots.

Expanse: *male*, 1.75 inches = 44.6 millim.; *female*, 2.25 inches = 57.4 millim.

Hab. Namaqualand.

Lophuron inornatum sp. nov.

(Pl. V., fig. 8.)

Forewings pinkish grey, crossed at the base by two indistinct dark grey zigzag lines; inner margin blackish grey, with a white patch a third of the length from the base.

Apical patch sharply cut off from the rest of the wing by a diagonal black streak, and the tip of the wing slightly clouded.

Hindwings dull rufous chestnut, with a dark brown border.

Head and thorax rufous grey.

Abdomen pale grey, freckled with black.

Expanse, 1.75 inches = 44.6 millim.

Hab. Namaqualand.

Lophuron pseudopylas sp. nov.

This species is somewhat difficult to describe owing to its considerable variability. I have picked out from a large series the two extremes.

SPECIMEN 1.

Forewings deep brownish grey, crossed by a number of hairlike transverse lines. From the centre of the outer margin to the costa along the outer edge of the cell runs a broad black band. Beyond this, to the apex, the ground colour is much darker than the rest of the wings, and is crossed by two zigzag, ill-defined lines.

Hindwings : basal half bright yellow, outer half dull greyish brown, with two darker narrow lines crossing the wings, and which take their rise at the anal angle.

Head, thorax, and abdomen dark grey, variegated with faint brown marks.

SPECIMEN 2.

Forewings uniform dark brownish grey, with the transverse hairlike lines almost obliterated. The transverse bar and the apical portion of the wing beyond it uniform deep brown.

Hindwings orange yellow, with deep rufous border, and only a slight indication of the inner of the two transverse lines, the outer one being entirely absent.

Head and body the same as in No. 1.

Expanse, 1.75 inches = 44.6 millim.

DIODOSIDA.

Dr. Staudinger has distributed, under the name of *Nephele fallax*, a very large species of this genus. Its size can have been the only reason, for it is absolutely unlike a *Nephele* in structure. I do not believe it has been published, but as I am not sure, it may for the present stand as *Diodosida fallax* (Staud.).

I have the two following species to describe :—

Diodosida uniformis sp. nov.

Forewings uniform greyish black, clouded with a number of indistinct darker markings.

Hindwings dark olive brown.

Head and thorax deep brownish black.

Abdomen clay brown, variegated with dark hairs.

Expanse, 2.25 inches = 57 millim.

Hab. Sierra Leone.

Diodosida brunnea sp. nov.

Forewings rosy chocolate, powdered with grey scales, and a large darker chocolate and wedge-shaped blotch occupying from the costa downwards nearly the whole centre of the wing. There are also a number of nearly obliterated marks of the same colour all over the wings.

Hindwings reddish chocolate, becoming greyer towards the anal angle. Fringe of hindwings white.

Head and thorax bright chocolate red.

Abdomen grey.

Expanse, 2 inches = 51 millim.

Hab. Namaqualand.

TRIPTOGON.

Here we have several things to note.

T. lyctus (Cram.) is the female of his *T. gorgon*, and therefore must sink as a synonym.

Mr. Kirby has made a blunder in uniting *T. fegeus* (Cram.) to *T. lugubris* (Linn.).

T. fegeus (Cram.) is confined to the island of Jamaica, and is a very good species.

Boisduval's *T. luctuosus* and *T. fegeus* appear to me to be species not yet in English collections, and ought to be looked into.

ALEURON.

Mr. Kirby here puts *Tylognathus scriptor* Feld. as synonym under *A. iphis* (Walk.), while it really is a synonym of *A. prominens* (Walk.). *A. butleri* Kirby is not an *Aleuron*, but a *Hemeroplanes*.

CALLIOMA.

I find in a large collection of Sphingidae from Aroa, Venezuela, a fine series of Calliomas, among which is a specimen of *C. lutescens* Butl., described from Hayti. *C. licastus* (Stoll) is pale and washed out compared with Brazilian and Honduras specimens, but the *C. parcae* (Fabr.) are larger, darker, and much more variegated than usual. *C. pluto* (Fabr.) (= *C. thorates* (Hübner)) are very bright green and gigantic in size.

I have three species to describe :

Callioma drucei sp. nov.

Nearest to *C. adalia* Druce.

Forewings bright olive green, instead of yellowish olive, as in *adalia* Druce, crossed by two curved chocolate transverse lines in the centre, instead of three straight ones, as in *adalia*. Near the base are also two instead of three transverse lines. Stigma in the cell white instead of black, as in *adalia*. The black patch in *adalia* near the outer transverse line is missing in my new species, and the apex is rounded off instead of hooked, as in *adalia*.

Hindwings in *adalia* brownish black, with an orange patch at the anal angle, while in *C. drucei* Rothschild they are plain blackish brown.

Head, thorax, and abdomen bright olive, with a faint brown line down the centre of abdomen.

Underside in *C. adalia*, basal half of forewings black, rest orange freckled with red and with three transverse chestnut red lines halfway across the wings. A deep red patch along the outer margin and a green apical blotch. Hindwings orange freckled with red, and with a broad red border. Across the centre of the wings is a red band. In *C. drucei* basal half of forewings dark grey ; outer half green with two transverse black lines. Hindwings greenish yellow freckled with black, with a broad green border and two transverse black lines.

Underside of body in *C. adalia* buff ; in *C. drucei* yellowish green.

Expanse, 2.25 inches = 57.4 millim.

Hab. Rio Demerara, British Guiana.

Callioma grisescens sp. nov.

Forewings pale lavender grey, with a browner patch at the base. A large white stigma in the cell and a dark brown transverse band just inside it. Brown shadings all over the outer half of the wings, and a dark brown mark in the deep-cut apical angle.

Hindwings bright chestnut red, with a buff patch at the anal angle and a big black spot running into the wing from it.

Head, thorax, and abdomen uniform lavender grey.

Expanse, 2.5 inches = 63.75 millim.

Hab.?

Callioma ellacombei sp. nov.

MALE.—*Forewings* deep brown mottled with vinaceous grey; stigma in cell silver, and shaped like a mark of interrogation upside down, thus γ . From the outer edge of the cell almost to the centre of the outer margin runs a bar of black. From the apex to the centre the outer margin is occupied by a large curved chocolate patch, bordered on the inside by a line of vinaceous grey.

Hindwings, basal two-thirds bright yellow, bordered with a narrow line of fiery red, very ill-defined; outer third black, with a large chestnut patch near the apex, and a vinaceous grey streak running into the black from the anal angle.

Head grey.

Thorax brown with grey centre.

Abdomen grey, with three small black dots on third, fourth, and fifth segments.

Underside, basal half of forewings orange yellow, rest of forewings and hindwings cinereous brown, with a number of irregular and faint transverse lines.

Body grey.

FEMALE.—Similar, but forewings all brown except the silvery stigma and the oblique black bar; hindwings have the outer third all black, and the fiery red band broader.

Expanse, 2.75 = 70.2 millim.

Hab. San Domingo (*fide* Felder) and Aroa, Venezuela.

HEMEROPLANES.

Of this genus I have nothing to say, only to describe a new species.

Hemeroplanes ornatus sp. nov.

(Pl. VI., fig. 9.)

Very similar to *H. triptolemus* (Cram.). It differs from the latter in all the markings being much accentuated; and instead of being picked out in two or three sober shades of brown, these markings are richly variegated with green, pink, and chocolate. The silver stigma in the cell is much shorter and rounder than in *H. triptolemus* (Cram.). The two most striking differences, however, are: first, the longitudinal central dorsal stripe on the abdomen in *H. ornatus* is green, while in *H. triptolemus* it is grey; and, secondly, *H. triptolemus* has a golden ring round each abdominal segment, while in *H. ornatus* these rings are absent, and only represented by three lateral yellow streaks on the second, third, and fourth segments. I have added on Pl. VI., fig. 10, a figure of *H. triptolemus* for comparison.

Expanse: *male*, 3.25 inches = 83 millim.; *female*, 4.5 inches = 115 millim.

Hab. Venezuela and other parts of South America.

CHOEROCAMPINAE.

THERETRA.

Here I have ten new species to describe, and a number of remarks to make. *Theretra lewisii* (Butl.) cannot be separated even as a subspecies from *T. elpenor* Linn., and must be relegated to a synonym. Of the group allied to *T. thyelia* (Linn.) I have a number of forms from all parts, very different in most cases; but I dare not describe them, as I have in nearly every case all the intermediate grades. *T. minor* (Butl.) and *T. major* (Butl.) must sink as synonyms of *T. lineosa* (Walk.), for I have them and every intermediate form from one locality in the Khasia Hills. *T. jocasta* (Druce) is a *Darapsa*, and not a *Theretra* at all. *T. ignea* (Butl.) is only an aberration of *T. scrofa* (Boisd.), as I have all intermediate forms.

***Theretra rufescens* sp. nov.**

(Pl. VI., fig. 11.)

Forewings orange chestnut, with a large patch of darker chestnut in the cell; and the apical third of the wing is also shaded in an ill-defined way with darker chestnut. Whole of the forewings vermiculated all over with dark chestnut freckles.

Hindwings deep black, with a small sulphur yellow tuft at the base of the wing, a large yellow V-shaped mark near the anal angle, and a yellow fringe.

Head and *thorax* ruddy chestnut.

Abdomen ruddy chestnut, with a black patch each side of the first segment.

Expanse, 4 inches = 102 millim.

Hab. British Guiana.

***Theretra obliterateda* sp. nov.**

This highly interesting species is another proof of the remarkable connection between the West African fauna and that of the Indo-Malayan region, for it is clearly very closely allied to *T. clotho* (Drury).

Forewings dusky buff, with a small black stigma in the cell. From the apex to the inner margin runs obliquely a transverse dark grey line very much obliterated. A still more obliterated transverse line runs from the outer edge of the cell to the inner margin.

Hindwings also dull buff, but so covered with long dark grey hairs that the ground colour is almost invisible, except round the margins and at the anal angle of the hindwings.

Head and *thorax* buff, slightly freckled with dark grey.

Abdomen buff.

Expanse, 3.5 inches = 89.25 millim.

Hab. Sierra Leone.

***Theretra catori* sp. nov.**

Forewings buffy olive, banded and freckled with chocolate brown. A black spot followed by an oblique line at the apex.

Hindwings deep brown, with a cream-coloured costal margin. In the middle of the wings is a large black patch, and from the anal angle an indistinct and clouded band of pale pink runs up into the wings.

Body yellowish olive.

Expanse, 4 inches = 102 millim.

Hab. Central North Borneo (coll. Cator).

Theretra staudingeri sp. nov.

This species I received from Dr. Staudinger, under the name of *Choerocampa cyrene*. However, *Choerocampa cyrene* Westwood is an insect from Java, and closely related to *T. (Choerocampa) clotho* (Drury), and has certainly no connection with this American species.

Choerocampa cyrene Druce (*nec* Westw.) certainly comes from Chiriqui, but is quite distinct from *T. staudingeri*, the name *cyrene* being already preoccupied by Westwood, Mr. Kirby very rightly renamed it *Theretra drucei*.

Forewings greyish green, costa and large patch in cell bright olive green. From the apex to the centre of the inner margin the forewings are crossed obliquely by a transverse deep green line, bordered on the inner side by a line of pale greenish grey and on the outer side fading away gradually into the greyish green ground colour.

Hindwings black, with an olive grey central band and an olive grey outer margin. Abdominal margin buff.

Head and *thorax* bright olive, bordered with olive grey; centre of thorax also olive grey.

Abdomen at the juncture with the thorax olive, fading gradually away into reddish buff.

Underside deep rufous freckled with black, and all four wings edged with deep grey.

Expanse, 4 inches = 102 millim.

Hab. Chiriqui (*vide* Staudinger).

Theretra striata sp. nov.

Forewings buffy brown, more olive near the base and on the costa. Wings crossed by five oblique transverse lines.

Hindwings black, with a yellowish buff band starting from the anal angle and crossing the wing almost to the apex.

Head and *thorax* dull olive, with whitish pink borders.

Abdomen brownish buff, with three somewhat darker longitudinal dorsal lines.

Expanse, 3.5 inches = 89.25 millim.

Hab. Japan.

This species is close to *T. lineosa* Walk., but differs in pattern, and is barely three-fifths the size.

Theretra javanica sp. nov.

Similar to the last, but much larger.

Forewings greyish buff, with six oblique transverse olive green bands, of which the one running from the apex to the centre of the inner margin is much the widest and most distinct.

Hindwings black, with the anal angle and abdominal margin straw yellow.

Head and *thorax* deep grey.

Abdomen deep grey above, pale buff on the sides, with deep brown dorsal longitudinal stripes.

Expanse, 4.5 inches = 115 millim.

Hab. Java (coll. Webster).

I believe this will eventually prove merely a subspecies of *T. lineosa* Walk., but I at present keep it distinct, because I have not seen any intermediate forms.

Theretra olivacea sp. nov.

Ground colour of the *forewings* olive pink, shading into deep olive towards the costa. In the cell is a small round black stigma. From the apex to the centre of the inner margin of the forewings runs a broad oblique transverse line of bright olive green, and on each side of it three hair-like lines of the same colour.

Hindwings black, with a broad central band of olivaceous buff.

Head and *thorax* olive green, with centre and borders pinkish grey.

Abdomen pinkish grey, with darker central line and a big olive patch on each side of the first and second segments.

Expanse, 3 inches = 76.5 millim.

Hab. Sao Paulo, Brazil.

Theretra guianensis sp. nov.

This species is nearest to *Theretra ceratomioides* (Grote and Rob.).

Forewings in *T. ceratomioides* buffy brown, while in the new species they are very dark chestnut brown; but the most conspicuous difference is that the three central oblique transverse lines which start from near the apex and reach to the centre of the inner margin run almost perfectly straight in *T. guianensis*, while in *T. ceratomioides*, about a third of their length away from the inner margin, they curve sharply inwards and then out again, enclosing a large pale buff area.

Hindwings black, without the vermiculated brown border which is present in *T. ceratomioides*. The buff band on the hindwings also much narrower and almost completely obliterated, and the spots near the base and at the anal angle are much smaller.

Underside: *forewings* much more uniform red and black, the freckles and vermiculations found in *T. ceratomioides* being absent.

Hindwings very dark, with two distinct black longitudinal bands.

Head, *thorax*, and *abdomen* similar to *T. ceratomioides*, but all markings larger and more accentuated.

Expanse: *T. ceratomioides* 4 inches = 102 millim.; *T. guianensis* 5 inches = 127.5 millim.

Hab. British Guiana.

Theretra perviridis sp. nov.

(Pl. V., fig. 12.)

Forewings olive green, with the costa more tawny. From the apex to the centre of the hindmargin run several parallel oblique transverse lines of a dark green colour, the exterior one being broadest. Stigma in cell black. Outer margin deeply hooked at the apex.

Hindwings: base pale buff, rest olive green, with large triangular spot in the centre.

Underside pale ochre yellow, densely freckled with black linear spots and crossed over both pairs of wings by two indistinct transverse lines.

Head, *thorax*, and *abdomen* olive green, gradually shading off into tawny.

Expanse, 2.9 inches = 74 millim.

Hab. Aroa, Venezuela.

Theretra lifuensis sp. nov.

Nearest to *T. clotho* (Drury).

Forewings buff, with pale olive transverse oblique band from the apex to the centre of the inner margin. The forewings are also much more densely powdered with black scales than in *T. clotho*.

Hindwings: in *T. clotho* the hindwings are black, with an irregular greyish-buff patch running up from the anal angle into the wing; in *T. lifuensis*, on the other hand, the hindwings are bright buff, with a black patch only at the base of the wings.

Head and *thorax* dull olive, with white borders.

Abdomen brownish buff.

Expanse, 3 inches = 76.5 millim.

Hab. Lifu, Loyalty Islands.

METOPSILUS.

Here I have two species to describe, and the following observations to make :—

Pergesa fusimacula Feld. is a true *Metopsilus*, and not a *Philampelus*, as Mr. Kirby says.

Philampelus dolichoides Feld. is undoubtedly an *Ampelophaga*, and has nothing whatever to do with *Metopsilus*.

Metopsilus albomarginatus sp. nov.

Forewings: ground colour deep olive brown, fading into purplish grey on the outer half of the wings. On the half of the wing inside the stigma in the cell there are three irregular rows of black dots, and the apical half of the forewings has three transverse bands of black spots. The costa is broadly creamy white, and the outer margin has a deep reddish fringe.

Hindwings black, with a yellowish buff border next to the forewings and a buff patch at the anal angle.

Head and *thorax* chocolate brown, with a white border.

Abdomen pale brown.

Expanse, 4 inches = 102 millim.

Hab. Khasia Hills, Assam.

Metopsilus aurantiacus sp. nov.

Forewings pale olive brown, with darker cloudings. A round black stigma in the cell and an irregular brown patch extending from the cell to the inner margin. Submarginal band at the outer margin silvery grey.

Hindwings black, with broad central dull orange band.

Head, thorax, and abdomen olive brown.

Underside: *forewings*, basal half olive grey, apical half orange, with a heavy silvery grey border and dotted with black.

Hindwings similar.

Thorax and *abdomen* bright pink, orange red at the sides.

Expanse, 3.5 inches = 89.25 millim.

Hab. ? (coll. Feld.).

PANACRA.

Here I only have to describe ten new species, and to remark that I have seven *P. lignaria* Walk. from Mackay, Queensland, almost black.

***Panacra natalensis* sp. nov.**

(Pl. V., fig. 13.)

Forewings: basal third blackish, variegated with grey, with a large creamy buff patch, brownish olive behind, and terminated by a blackish brown spot at the costa. Four oblique transverse lines extend from near the apex to the base of the inner margin. They are black and curved near the apex, and the spaces between the two exterior ones pale buff, the rest of the wing outside these lines blackish, with a large irregular patch of pinkish buff.

Hindwings blackish brown, with some creamy buff markings, the front margin whitish, and two indistinct submarginal lines.

Underside creamy buff, variegated with pale tawny and grey; *forewings* crossed by five lines, the centre one of which is darkest; *hindwings* crossed by four lines parallel to the outer margin.

Body brown, variegated with buff, and with two dorsal longitudinal lines on the abdomen and one on each side of it.

Expanse, 1.9 inches = 48.5 millim.

Hab. Natal.

***Panacra rosea* sp. nov.**

(Pl. VI., fig. 14.)

Forewings pale rose pink, with a broad black band extending obliquely from near the apex of the costa to the base of the inner margin, with three fine hairlike lines running the whole of its length on the outside edge; moreover, the stigma in the cell is almost joined to the base of the wing by a fine black line.

Hindwings: basal half greyish brown; apical half rose pink, with pinkish red submarginal band.

Underside: *forewings*, basal half pale greyish brown, faintly marked with round darker freckles; apical half reddish or vinaceous buff, heavily freckled with linear black dots.

Hindwings vinaceous buff, closely freckled with black dots.

Head, thorax, and abdomen, above rosy pink, with two darker dorsal marks; below vinaceous brown.

Expanse, 2.7 inches = 68.9 millim.

Hab. Lifu, Loyalty Islands.

***Panacra lifuensis* sp. nov.**

MALE.—*Forewings* pale silvery grey, with a black stigma in cell. From the apex to the centre of the inner margin extends obliquely a transverse line of brown, bordered on the inner side by three hairlike and very fine lines of dark grey on buffy yellow ground. At the inner angle is a black patch of extremely variable extent, as shown by nearly thirty-five specimens I possess.

Hindwings deep brownish grey, with a pale band extending up into the wing from the anal angle to the apex.

Head and thorax pale grey.

Abdomen yellowish grey, slightly vermiculated with darker grey.

FEMALE.—Similar to male, but generally darker, and with a slight flush of pink all over.

Expanse, 2.5 inches = 63.75 millim.

Hab. Lifu, Loyalty Islands.

***Panacra griseola* sp. nov.**

Somewhat similar to *P. lignaria* Walk.

Forewings.—*Male* deep grey, a wide belt of white with greyish clouding occupying two-fifths of the wing. From the apex to the inner angle extends a blackish submarginal line; and inside this, reaching to the centre of the inner margin, are four curved hair like dark lines. In the middle of the wing, behind the stigma in the cell, is a broad irregular black band, extending four-fifths the length of the wings.

Hindwings dark grey, with a black streak running from the anal angle to the apex of the wing.

Head and thorax black, with two white longitudinal lateral bands starting in front of the eyes and extending back to the juncture with the abdomen, and with a number of greyish longitudinal streaks.

Abdomen dark grey, variegated with lighter marks, and with a central black dorsal line.

FEMALE.—Similar to male, but paler and much larger.

Expanse: *male*, 2.75 inches = 70.1 millim.; *female*, 3.25 inches = 89.25 millim.

Hab. Lifu, Loyalty Islands.

***Panacra pseudovigil* sp. nov.**

This little species has a great resemblance to *P. vigil* (Guér.), but is barely half the size.

Forewings dull whitish grey. From the base of the inner margin to the costa halfway between the cell and the apex there extends an oblique transverse brownish black band. The stigma in the cell is a very small black dot. From the apex to the centre of the inner margin two hairlike oblique transverse lines extend. At the angle of the inner margin and at the apex are two black spots or patches.

Hindwings dark grey. Almost to the apex there extends from the anal angle a black submarginal band.

Head and thorax deep grey, with whitish borders.

Abdomen grey, freckled with white and brown specks.

FEMALE.—Similar, but larger and duller in colour.

Expanse: *male*, 1.75 inches = 44.6 millim.; *female*, 2.25 inches = 57.4 millim.

Hab.?

***Panacra butleri* sp. nov.**

Forewings fiery orange, with three flame crimson broad bands extending from the apex to the inner margin. From the apex to the angle of the inner margin is a deep oval dark grey patch forming a border to the forewings on the outer margin, and there is a black dot (stigma) in the cell.

Hindwings greyish black; anal angle and a central band extending from it halfway to the apex of the wings, dull orange.

Head dull red, bordered by two grey lines.

Thorax fiery red, with a grey line down the centre.

Abdomen grey, with two dorsal longitudinal red bands.

Underside yellow, with two transverse oblique black bands across both pairs of wings.

Expanse, 2.25 inches = 57.4 millim.

Hab.? (marked Asia Or. coll. Carstanjen).

***Panacra dohertyi* sp. nov.**

This very curious species is almost exactly intermediate between the genera *Panacra* and *Angonyx*. It has the angulated forewings of *Angonyx* with the pattern and coloration of *Panacra*.

Forewings dark grey. A longitudinal black streak, about a quarter of an inch long, runs from the base outward to the inner edge of the cell. From the costa just before the apex five narrow black lines close together extend obliquely across the wing nearly to the base of the inner margin. There is a small black stigma in the cell. A short zigzag white streak reaches from the apex to the outside black transverse line.

Hindwings greyish black, slightly freckled with grey and buff towards the outer margin.

Head and *thorax* dark grey, with paler borders.

Abdomen on the top grey, with transverse narrow bands of orange brown, on the sides reddish brown, spotted and freckled with grey.

Expanse, 3 inches = 76.5 millim.

Hab. Gunong Jjau, Perak.

***Panacra variegata* sp. nov.**

Nearest to *P. scapularis* Walk.

Forewings bright rosy grey, marked at the base and along the costa with several olive and black spots. At the apex is an olive brown patch, followed by a whitish mark. Across the cell from the costa to the inner margin a broad band of olive brown crosses the forewings obliquely, and has at the inner margin two darker patches. At the angle of the inner margin is a large irregular olive brown spot, and from the outer margin a large wedge-shaped olive brown patch extends inwards into the wings.

Hindwings dull grey, variegated with orange brown.

Head olive brown.

Thorax grey in the centre, olive brown at the sides.

Abdomen yellowish grey.

FEMALE.—Similar to male, but with a more rufous tinge.

Expanse, 2 inches = 51 millim.

Hab. Philippine Islands.

***Panacra perakana* sp. nov.**

Forewings brown, crossed in front of the cell by a brownish black oblique transverse band composed of three or four lines. Apical third greyish pink, with an olive brown patch along the outer margin and two smaller round spots of olive brown near the apex.

Hindwings deep brown, with a wide yellow border along the sides of the abdomen and a yellow streak extending up into the wings from the anal angle.

Head and thorax pinkish grey.

Abdomen on the dorsal surface pale grey, gradually deepening into rusty chestnut; sides pale brown, variegated with red and white dots.

Expanse, 2.5 inches = 63.75 millim.

Hab. Gunong Jiau, Perak.

***Panacra hamiltoni* sp. nov.**

Upperside: *forewings* dark olive green; basal fifth blackish grey, crossed by several indistinct black transverse lines; median portion of the costa greenish yellow, freckled with black, and united to a transverse central band of the same colour, which is slightly mottled with grey. On the outside of this streak are three fine hair-like oblique and transverse lines extending from the centre of the inner margin to near the apex, where they are curved in towards the costa. A whitish buff marginal patch close to the inner angle at the outside of the exterior black line is extended to the inner black line between the third and fourth nervules. There is a small angular dark olive green mark at the apex.

Hindwings greyish walnut brown, with the area near the apex mottled with ochre, blackish brown, and buff, the buff colour confined to a submarginal line which stops at the third nervule.

Underside: ground colour of *forewings* cinnamon brown, the marking similar to those on the upper surface, but much fainter and less defined. Basal half of *hindwings* yellowish buff, finely vermiculated with black; apical half drab grey, crossed by three fine transverse black lines.

Head, thorax, and abdomen tawny olive, with black hind edges to the segments and a dorsal stripe of vinaceous cinnamon, below buff.

Expanse, 2.3 inches = 58.7 millim.

Hab. Khasia Hills, Assam.

ANGONYX.

***Angonyx boisduvali* sp. nov.**

Forewings pale greyish olive, crossed in the centre by a transverse line of black. Behind the black line is a large blotch of pale lavender colour, separated from the costa by a round patch of deep olive and by a band of the ground colour from the outer margin. From the apex obliquely to the edge of the lavender blotch there extends a zigzag black line.

Hindwings greyish olive, with a pale grey patch at the anal angle and a brown border. A pale buff streak extending into the wing from the anal angle.

Head greyish buff, *thorax* dark olive, *abdomen* pale greyish olive, with a narrow rust-red ring between the last two abdominal segments.

Expanse, 3 inches = 76.5 millim.

Hab. Guadalcanar, Solomon Islands (coll. Woodford).

***Angonyx splendens* sp. nov.**

(Pl. V., fig. 15.)

Forewings deep grey on the basal third, strongly vermiculated with a paler colour. From the centre of the inner margin of this grey portion an oblique black zigzag line extends to the upper edge of the cell, then curving round this black line runs longitudinally to the centre of the outer margin. The apical two-thirds of the *forewings* are divided by this line into two irregular parts: the one nearest the

costa is greyish olive, vermiculated with black, and has a white blotch halfway between the apex and the end of the cell. The part nearest the inner margin is dull pink, with a number of partly obliterated olive lines and streaks, and with a chocolate brown patch at the angle of the inner margin.

Hindwings blackish grey with a central band of fiery orange, extending right across the wings from the anal angle.

Underside deep grey varied with deep red patches.

Head and *thorax* deep rosy grey, with lines of dirty white and two patches curving outwards towards the base of the wings.

Abdomen greyish brown, with a number of darker vermiculations. Down the centre extends a narrow dark line, and on each side are several partly obliterated orange patches.

Expanse: *male*, 2.5 inches = 63.75 millim.; *female*, 3 inches = 76.5 millim.

Hab. Queensland.

DEILEPHILA.

Here *D. esulae* Boisd. is not a species, but one of the hybrids between *D. euphorbiae* (Linn.) and *D. hippophaes* (Esp.).

Deilephila wilsoni sp. nov.

Hitherto a single species only of this genus was known from the Sandwich Islands and named by Dr. A. G. Butler *Deilephila calida* (*Ann. Nat. Hist.* [5], vii., p. 317 [1881]). In 1890 after Mr. Scott Wilson's return from these islands I received from him a few insects, among which were several *D. lineata* (Fabr.), one *D. calida* Butl., and a specimen of a new species which I now have much pleasure in naming after him.

Forewings greyish brown with three blackish bands, having more the aspect of large blotches. The first is at the base, the second in the centre (and which includes a greyish brown patch at the costa), and the third extends from the outside of the second, between the third and fourth nervules, to the apex. The cell contains a blackish patch.

Hindwings brownish black, with a broad band of rufous orange extending across the wings, and is slightly narrower at the anal angle than at the outer margin.

Underside deep ferruginous, with a broad margin of brownish black, both wings crossed by two parallel transverse lines of black.

Body deep brown, with a white border each side.

Expanse, 3.2 inches = 81.6 millim.

Hab. Hawaii, Sandwich Islands (coll. Scott B. Wilson.)

DUPO.

One new species.

Dupo domingonis sp. nov.

Nearest to *Dupo linnei* (Grote and Rob.), but has several very sharply defined differences.

Forewings in *D. linnei* are marked by a distinct lavender grey border along the outer margin, and the pale transverse band extends from the apex of the wing to the

middle of the inner margin, and is joined to the base of the wing by a broad longitudinal band and to the costa, one-fourth from the apex, by a cone-shaped short band. In *D. domingonis* there is no marginal or submarginal border, and the transverse band does not start from the apex but one-fourth nearer the base, and extends from the costa to the inner margin, fully one-third nearer the outer margin than *D. linnei*, thus cutting off the apical third of the wings into a wide brown border, which is marked with two large and irregular silver grey patches.

Hindwings yellowish green at the base in *D. domingonis* and lack the two black bands which are present in *D. linnei*. Outer half of the hindwings in the new species greyish brown with a very large pink patch at the anal angle, and a square black blotch behind it, which is smaller than in *D. linnei*. A narrow black line extends entirely across the wings from the anal angle.

Head, thorax, and abdomen similar to *D. linnei*, but the white and pale grey marks are much wider and more distinct.

Underside in *D. linnei* dull brown; in *D. domingonis* bright pink.

Expanse, 4 inches = 102 millim.

Hab. San Domingo.

EUCHLORON.

E. lacordairei (Boisd.) must sink as a synonym as it is indistinguishable from *E. megera* (Linn.).

DARAPSA.

D. davidi (Oberthür) is not a *Darapsa* at all, but belongs to the genus *Pterogon*.

Darapsa schausi sp. nov.

Nearest to *D. suana* (Druce).

Forewings ground colour, instead of grey as in *D. suana*, is greyish brown. The olive patch at the base of the forewings in *D. suana* (Druce) is entirely wanting in this species, and the two transverse bars in front of it are scarcely indicated in *D. schausi* (Rothsch.). The broad olive green band which in *D. suana* (Druce) crosses the wings, transversely, outside the cell, is replaced in *D. schausi* Rothsch. by three transverse rows of blackish brown, half-moon shaped spots.

Hindwings, in the new species, black, with an olivaceous buff mark extending from the anal angle across the disc of the wings.

Head and thorax dark olive bordered with white, and variegated rufous orange hairs.

Abdomen paler olive, fading off gradually into olive brown.

Underside: wings and body pale orange, densely freckled with grey.

Expanse, 3.5 inches = 89.25 millim.

Hab. Rio Janeiro (Petropolis).

NOTE.—I have received *Darapsa* (Choerocampa) *tyndarus* (Boisd.) from Aroa, Venezuela, in considerable numbers, and have seen three specimens from Trinidad, and several from Costa Rica, while the type is described as from Brazil.

DAPHNIS.

D. pallescens Butl. is founded on a dwarfed and imperfect specimen of *D. magnifica* Butl.

D. hypothous (Cram.) has been stated to have been taken in Scotland, and is recorded as a brown variety of *D. nerii* (Linn.). I have seen the specimen ; but I fully believe it is either an escaped artificially reared one, or got changed by accident. I have two new species to describe, and a new subspecies.

Daphnis gloriosa sp. nov.

This species is nearest to *D. magnifica* Butl., but is much larger, and the pattern is very different and more blurred.

Forewings in *D. magnifica* pale olive, with a brownish fringe ; in *D. gloriosa* they are deep blackish green. In *D. gloriosa* the dark oval patch at the base of the forewings is not abruptly separated from the thorax by a buff blotch, as in *D. magnifica*, but only shows a paler mark for half its diameter. In *D. magnifica* there is a distinct pinkish buff transverse band in front of the oval patch which merges into the paler coloured costa ; while in *D. gloriosa* there is a pale brown band, tinged dull rose, and which has very indefinite headlines. *D. magnifica*, the central area of the forewings, is occupied by a huge olive green patch, merging into a lavender coloured blotch which extends to the outer margin ; in *D. gloriosa*, on the other hand, the central patch is greenish black, and the blotch which reaches to the outer margin is indistinct in outline and of a dull brown colour. In the apical third of the forewings the pale central oblique line which extends from the costa to the outer margin is quite straight in *D. magnifica*, while in *D. gloriosa* it is boldly curved outwards.

Hindwings: in *D. gloriosa* the pale hairlike line, which extends from the anal angle to the apex in *D. magnifica*, is entirely wanting, and the central black patch is much larger in the new species.

Head and *prothorax* in *D. magnifica* are grey, and the *thorax* is grey in the centre and olive at the sides, while in *D. gloriosa* the *head* and *thorax* are uniform dark olive.

Abdomen in *D. magnifica* olive buff, while in *D. gloriosa* it is blackish olive.

Expanse, 5.5 inches = 140.25 millim.

Hab. N. Borneo.

Daphnis torenia Druce subsp. *rosacea* subsp. nov.

This new form was considered by Mr. Druce the same as his *D. torenia* from Fiji. I believe, however, that it stands intermediate between *D. torenia* and *D. angustans* Feld., but only separate it subspecifically from the former, and I think when we come to breed them we shall find some of the species only aberrations, and, moreover, I have typical *D. torenia* from Lifu.

Forewings differ from *D. angustans* and *D. torenia* in their bright, rosy pink ground colour. On the forewings the central dark olive transverse line which is in front of the olive basal blotch in *D. angustans* is absent in this form, and in the place of the large olive green central patch *D. subsp. rosacea* a narrow olive wedge-shaped bar, widest at the costa, and the dark area beyond fades off into the rosy ground colour.

Hindwings in *D. angustans* dark olive brown, crossed in the centre by a

narrow cream-coloured band, which spreads out at the anal angle into a broad light grey patch reaching nearly to the base of the wing, while in the form I am describing the base of the wings is black, and the rest is bright brownish pink with a transverse, narrow, paler band, and the anal angle creamy buff.

Head and *thorax* of the new form, deep mauve pink with chocolate side patches, while in *D. angustans* they are lavender grey with the side patches bright olive.

Abdomen deep olive brown in *D. angustans*, while in the new form it is pale rosy brown.

Expanse, 3.5 inches = 89.25 millim.

Hab. Lifu, Loyalty Islands.

***Daphnis chimaera* sp. nov.**

(Pl. VI., fig. 16.)

Forewings pale ochraceous buff, with the nervules blackish in the centre. The costa dotted with black, and with two spots of the same colour near the apex. A faint, almost obliterated dark line runs obliquely from the apex to the third nervule, and there is a black patch at the angle of the inner margin. Near the outer margin there are a large number of tiny linear black dots.

Hindwings brownish black, with the front margin pale creamy buff. There is a large submarginal ochraceous fascia, broadest at the anal angle, and bordered with a narrow black line.

Underside pale ochraceous, base blackish brown, and all wings freckled with black and with two transverse rows of black spots.

Head, thorax, and abdomen pale ochraceous buff, with three brown fasciae near the base and sides of the thorax.

Expanse, 3.7 inches = 94.35 millim.

Hab. ?

AMBULICINAE.

AMBLYPTERUS.

Amblypterus pavonicus Moore was founded on specimens from the Andaman Islands, but I have a large series from Java, Borneo, and the Khasia Hills, and also a large series of *A. panopus* (Stoll) from Bhutan, Ceylon, Java, Amboyna, and elsewhere; and from the intermediate character of many of the Borneo and Java specimens I am compelled to unite the two species, and the single species must stand as *Amblypterus panopus* (Stoll).

AMBULYX.

In this genus, unfortunately, I have much to alter. *A. meander* (Boisd.) is not an *Ambulyx* at all, but a true *Marumba*. I have all the intermediate forms between *A. lycidas* Boisd., *A. eos* (Burm.), and *A. tithonus* Kirby, so these three names are synonyms of one species, which must stand as *Ambulyx lycidas* Boisd.

There are also every intermediate between *A. ochracea* Butl. and *A. schauffeltergeri* Brem. and Grey, so the species must stand as *Ambulyx schauffeltergeri* Brem. and Grey. *Ambulyx thwaitesii* (Moore) is identical with *A. subocellata* Feld., while on comparing Felder's type and a number of specimens of *A. subocellata*, collected by Mr. W. Doherty, with *A. turbata* Butl., I find the latter to

be a good and distinct species confined to India and Assam, while *A. subocellata* is from Java and the neighbouring islands.

Ambulyx auripennis Moore, *A. sericeipennis* Butl., *A. rhodoptera* Moore, *A. consanguis* Butl., *A. maculifera* Walk., *A. liturata* Butl., and *A. lahora* Butl., must sink as species and rank as subspecies of *A. substrigilis* Westw.; and I even think they are barely subspecies, for of most of them I have specimens and intermediate forms, all taken in Sikkim and the Khasia Hills. I have five new species to describe.

***Ambulyx amboynensis* sp. nov.**

Similar to *A. subocellata* Feld.

Forewings uniform ochraceous brown, with a central black stigma in the cell and two boldly concave dotted ill-defined lines across the disc of the forewings.

Hindwings buffy orange, with a narrow brown margin and two central darker bands across the wings; the outer one consisting of small black half-moon like spots joined together, the inner one being a straight line.

Head, thorax, and abdomen ochraceous brown.

Expanse, 3.75 inches = 95.63 millim.

Hab. Amboyna (coll. W. Doherty).

***Ambulyx dohertyi* sp. nov.**

Forewings greenish brown, with a purple grey band a quarter of an inch wide crossing the centre. Apical patch large and of a purplish grey colour. From the apex to the outer edge of the inner margin extends a convex brown band. The costa has three irregular greenish patches, and on the inner margin is a blackish patch about one-fifth from the edge.

Hindwings orange bordered with brown, the outer edges deeply scalloped and the fringes grey. The anal angle has an irregular grey and black patch, within which is an imperfect and small ocellus.

Head pinky grey, *thorax* purple grey with green margins, *abdomen* purplish brown.

Expanse, 4 inches = 102 millim.

Hab. Humboldt Bay, N. New Guinea (coll. W. Doherty).

***Ambulyx japonica* sp. nov.**

Forewings yellowish grey, marginal and submarginal area from the apex to the outer point of the inner margin brownish grey, with a distinct black convex band separating it from the paler general colour.

The forewings are also crossed by a broad sub-basal band of greenish olive colour, and there is a central black stigma in the cell.

Hindwings greyish pink, with a heavy black border and some irregular dark spots and bands on the disc of the wings.

Head and thorax grey, with chestnut borders; *abdomen* grey, with two lateral orange spots on the fifth abdominal ring, and a dark brown tip.

Expanse, 3.5 inches = 89.25 millim.

Hab. Kiushiu, South Japan.

***Ambulyx schausi* sp. nov.**

Similar to *A. palmeri* Boisd.

Forewings, however, crossed by a number of hairlike, zigzag lines. Basal

area, instead of having three chocolate brown spots, is crossed by a heavy continuous dark brown band, and there are three dark patches on the inner margin instead of one.

Hindwings more yellowish red than in *A. palmeri*, and the marginal and two central bands narrower and more zigzag than in that species. The pink apex of *A. palmeri* also is wanting in *A. schausi*.

Expanse, 4 inches = 102 millim.

Hab. Petropolis, Rio Janeiro (coll. Schaus).

Ambulyx trilineata sp. nov.

Nearest to *A. placida* Moore, but only half the size.

Forewings similar to *A. placida* in marking, but much darker in colour, and more clouded.

Hindwings orange with a black border and three zigzag, irregular lines across the disc instead of two, as in *A. placida*.

Expanse, 3 inches = 76.5 millim.

Hab. Kiushiu, South Japan.

ORYBA.

From a good series and from carefully comparing Boisduval's description of *O. robusta* I am forced to sink *Oryba imperialis* (Druce) as a synonym of *O. robusta* of Walker. If, however, Boisduval's identification is wrong, there are two species in Brazil, as I have *O. imperialis* from British Guiana and from Brazil, while my specimens of *O. achemenides* (Cramer) came from Trinidad.

NEPHELE.

One new species to describe :

Nephele aureomaculata sp. nov.

This very distinct species inhabits the Upper Congo and has no near relative.

Forewings deep blackish brown, ending in a large diamond-shaped grey patch extending the whole width of the outer margin. In the centre of the inner margin is a large round blotch of a brownish orange colour.

Hindwings blackish brown.

Head and *thorax* brownish black.

Abdomen, brown above, with alternate black and white transverse stripes on the sides.

Expanse, 3 inches = 76.5 millim.

Hab. Upper Congo.

SPHINGINAE.

DILUDIA.

I received large numbers of this genus from Aroa, Venezuela, and found them exceedingly variable. I think from the great variety it will eventually be found that *D. brevimargo* Butl. and *D. rufescens* Butl. will have to sink as synonyms, for they are, in my opinion, mere aberrations of *D. florestan* (Stoll) and *D. lichenea* (Walk.). Venezuelan specimens of *D. albiplaga* (Walk.) are fully a third larger

than the Brazilian ones, and generally much paler in colour, though one of my six Venezuela ones is the darkest I have ever seen; the expanse of the two largest is 7 inches = 178·5 millim.

MEGANOTON.

Here I have four species new to science to describe.

Meganoton cocytioides sp. nov.

This is the largest of the genus, and curiously like a *Cocytius* in its markings.

Forewings clay brown, powdered with grey scales, giving the wings a marbled appearance.

There is a very large white stigma with a black ring round it in the cell, and joined to the costa by a very broad and short oblique black band. On the outer edge of the cell is a black spot. From the costa, a fourth from the apex, springs a broad, heavy black band, which boldly curves round into the wing and with its other extremity joins the apex. Between this band and the cell the forewings are crossed transversely by four indistinct bands of brownish, half-moon shaped spots; from the apex to the angle of the inner margin there extends a submarginal row of black spots. On the disc of the wings the two central longitudinal lines, so characteristic of the genus, are increased to an enormous size and are extremely broad.

Hindwings blackish brown, base deep grey, abdominal margin very broad and pale grey. There is an indistinct pale band across the disc of wings, starting from the anal angle.

Head and *prothorax* brownish.

Thorax in the centre brownish red, sides velvety black, with a white band at the base of the wings and a dark grey band separating the red centre from the black.

Abdomen greyish brown on the dorsal surface with a narrow black line down the centre. On each side is a broad and heavy black longitudinal band, and below this, on each side of the first four abdominal segments, are round cream-coloured patches set in a black ring, exactly as in *Cocytius cluentius* of Cramer.

Underside uniform brown, with whitish yellow fringes, a dash of white near the base of the hindwings, and basal two-thirds of inner margin of forewings buff.

Body snow white.

Expanse: *male*, 5·5 inches = 140·25 millim.; *female*, 7 inches = 178·5 millim.

Hab. Fort Mackay, Queensland.

Meganoton distinctum sp. nov.

(Pl. VII., fig. 19.)

Forewings silvery grey with faint and slightly darker cloudings. From the apex obliquely to the outer edge of the cell there extends a slightly zigzag black line. Within the cell is an indistinct round dark grey stigma.

Hindwings dark blackish brown, fading into silvery grey on the portion nearest the anal angle. The fringes on *fore-* and *hindwings* are evenly and alternately streaked black and white.

Head, thorax, and abdomen silvery grey.

Expanse, 4·5 inches = 114·75 millim.

Hab. North Queensland.

Meganoton lifuense sp. nov.

(Pl. VII., fig. 20.)

FEMALE.—*Forewings* greyish white, crossed by numerous zigzag, indistinct brown transverse lines.

Hindwings brown, with an ill-defined grey patch at the anal angle.

Head and *thorax* white, with two black tufts at the juncture with the abdomen.

Abdomen yellowish grey, with three longitudinal dorsal brown stripes.

Male, similar to the female, but has the ground colour darker, and the markings more sharply defined.

Expanse : *male*, 3 inches = 76.5 millim. ; *female*, 3.75 inches = 95.63 millim.

Hab. Lifu, Loyalty Islands.

Meganoton khasianum sp. nov.

This very aberrant species has much the appearance of *Daremma hageni* (Grote).

Forewings reddish brown, clouded with grey and striped and spotted with black; in the cell there is a round white stigma in the centre of a black ring, and there is a black patch a fourth from the base of the inner margin. After the cell the wings are crossed by three heavy but indistinct zigzag bars, in between which are pale grey areas.

Hindwings dark brown.

Head and *thorax* dark brown.

Abdomen paler brown, with a central black line and some lateral irregular white dots and black streaks.

Expanse, 4 inches = 102 millim.

Hab. Khasia Hills, Assam.

PSEUDOSPHEX.

In this genus *P. obscura* Butl. must sink as a synonym of *P. tetrio* (Linn.), for in a large series from Aroa, Venezuela, I have specimens ranging in colour from the palest *P. tetrio* through every intermediate form to *P. obscura*, and two specimens are much darker than *P. obscura*, being nearly black.

MACROSILA.

Venezuela specimens of *M. lefevrei* (Guér.) are very small and pale in colour.

Macrosila rotundata sp. nov.

(Pl. VII., fig. 17.)

Forewings pale grey, clouded and streaked with darker grey and with two central transverse brown lines, starting from the costa about a third from the base, and crossing obliquely to the centre of the cell, where they join and extend as a broad brown band at right angles to the centre of the outer margin of the forewings. There are also two zigzag, thin, transverse lines crossing the centre of the wings, and a white round stigma is in the cell.

Hindwings brown, with a large greyish patch at the anal angle.

Head grey.

Thorax grey, with black circle all round.

Abdomen grey, with six alternate brown and white patches on each side.

Expanse, 3.75 inches = 95.63 millim.

Hab. ?.

PSEUDODOLBINA genus nov.

Nearest to *Apocalypsis*, but differs in its small size, short and not pointed wings, and straight-cut margins.

Distribution same as single species.

Pseudodolbina veloxina sp. nov.

(Pl. VI., fig. 18.)

Forewings greyish black, crossed by nine indistinct wavy transverse lines of a brilliant black colour. A round white stigma in the cell.

Hindwings dark brown, with an indistinct blackish and grey mark at the anal angle. Fringe buff.

Head and *thorax* greyish black.

Abdomen mixed greyish brown and black, with an indistinct orange round blotch on each side of the first abdominal segment.

Underside all wings deep brown, yellowish at the base and on the costa. Palpi, legs, thorax, and abdomen bright yellow.

Expanse, 2.5 inches = 63.75 millim.

Hab. Khasia Hills, Assam.

COCYTIUS.

The genus *Cocytius* is a very hard one to work out, although the number of species is small and the species themselves are giants. Although the number of species is so small, and fortunately the number of synonyms is also very limited, there have been a number of most reprehensible errors committed in connection with this genus.

First of all the name *Cocytius godartii* (Boisd.) has been since universally applied to a Central American species which no more resembles Boisdual's figure than a fly does.

Then Mr. Druce figures the true *C. godartii* (Boisd.) in the *Biologia Centrali-Americana* under the name of *C. rivularis* (Butl.).

Then Mr. Butler places as the male of his *C. rivularis* the species falsely known as *C. godartii*, and which I am describing as new under the name of *C. affinis*.

C. rivularis (Butl.) is a good and very distinct species, which can always be recognised, though the figure of it in the *Transactions of the Zoological Society*, vol. ix., is very bad.

Lastly, Mr. Kirby has not been careful in looking up the three names *C. medor* (Stoll), *C. hydaspus* (Cram.), and *C. antaeus* (Drury).

C. medor (Stoll) is the same as *C. hydaspus* (Cram.), and so the two species must stand as *C. antaeus* (Drury) and *C. hydaspus* (Cram.).

Cocytius affinis sp. nov.

Forewings olive brown, variegated with olive green ; they are crossed by about eight black undulated lines, two of which are basal and one submarginal. The latter is much more wavy than the rest. Of the remaining five lines, which cross the wings at right angles to the costa, and extend from the costa to the inner margin, two are situated near the outer edge of the cell and the rest midway between the cell and the submarginal line. Besides these lines there is a black undulated streak extending from the submarginal line between the first and second nervules to the apex, and there are a number of marginal angulated spots. Some of the black lines and marks are bordered with greyish buff.

Hindwings brownish black, with a large part at the base ochre yellow. Centre of the wing between the nervules entirely transparent. Anal angle marked with some grey and black streaks.

Underside brownish black.

Forewings, with a large ochraceous patch behind the cell ; *hindwings*, same as above.

Thorax black, tinged with dark olive green, and a longitudinal black patch at each side.

Abdomen same colour, with two black lateral lines and three ochraceous yellow patches on each side.

Expanse : *male*, 4.2 inches = 107 millim. ; *female*, 5.2 inches = 132.6 millim.

Hab. Central America and North Venezuela.

This species is uniformly much smaller than *C. antaeus*, and of a more olive green colour.

Cocytius magnificus sp. nov.

(Pl. VII., fig. 21.)

This species is undoubtedly the finest of the genus. It is nearest to *C. walkeri* (Boisd.), but can be at once distinguished by the more sharply defined pattern, and the bright reddish maroon of the markings, instead of dull black as in *C. walkeri*.

Forewings gallstone yellow, variegated with zigzag streaks and marks of purplish maroon. From the costa run three pairs of irregular maroon streaks halfway across the wing.

Within the cell is a whitish stigma bordered with maroon, and from the cell there extend towards the outer margin the two characteristic longitudinal stripes, also bright maroon in colour, as is also the basal half of the inner margin.

Hindwings base orange yellow, running in a streak down the abdominal margin halfway to the anal angle. Central area of wings almost transparent greyish brown, with lighter mark and a yellowish patch in the anal angle. Outer third of wings bright red maroon. Fringes of all wings spotted with purple and yellow alternately.

Head and *thorax* gallstone yellow, heavily margined with purple.

Abdomen gallstone yellow, with four lines of paler yellow and a spot of yellow on each side of every segment.

Expanse, 6.5 inches = 165.75 millim.

Hab. British Guiana.

PHLEGETHONTIUS.

P. pseudoconvolvuli (Schauf.), *P. orientalis* (Butl.), and *P. roseofasciata* (Koch) are only subspecies, as every intermediate form occurs between them and *P. convolvuli* (Linn.); in fact, *P. pseudoconvolvuli* and *P. orientalis* are so close to the typical *P. convolvuli* that I almost should be justified in reducing them to synonyms.

I have a specimen collected at Sierra Leone by Dr. W. G. Clements, which is undoubtedly a typical *P. mauritii* (Butl.), so that this species has a much wider range than was supposed, and I believe eventually will prove to be merely a dimorphic form of *P. fulvinotata* (Butl.). From Aroa, Venezuela, I have two fine specimens of *P. ochus* (Klug.), which differ from the typical Honduras form in having a brilliant rufous chestnut ground colour in the forewings instead of dull brown, and the spaces between the bands of the hindwings, instead of being dull brownish grey, are yellowish chestnut.

Among my series of *P. rustica* (Fabr.) from Venezuela are two specimens very like my new *P. harterti*; but I do not think that species occurs out of *Bonaire*, and being isolated on an island, it, in my opinion, is a good species, and these forms from the mainland are merely worn and abraded second brood specimens.

***Phlegethontius harterti* sp. nov.**

Similar to *P. rustica* (Fabr.), but smaller and paler.

Forewings pale grey, crossed by a number of darker grey and pale buff zigzag transverse lines. A darker patch in the cell.

Hindwings dark brown, with a large black-and-white patch at the anal angle.

Head and thorax pale brownish grey.

Abdomen greyish brown, with three yellow patches on each side, and two rows of white spots, as in *P. rustica*.

Expanse, 4.75 inches = 121.2 millim.

Hab. Bonaire, Dutch West Indies (coll. Hartert).

***Phlegethontius indistincta* sp. nov.**

Forewings greyish buff, variegated with black, and crossed by a number of ill-defined transverse blackish lines, which are more strongly marked near the costa than near the inner margin. One of these lines is situated near the base, two very oblique ones a third from the base, and three at right angles to the costa beyond the centre of the wing.

There is a submarginal undulated black streak extending almost to the outer margin between the fourth and fifth nervules, and having a longitudinal streak extending from there to the apex, and which is slightly angulated. Cell has a patch of greyish buff shining through from the under surface.

Hindwings blackish brown, with the base and an almost obliterated submarginal band greyish buff; first nervure greyish buff, marked with four blackish brown dots.

Underside uniform dull brown; hindwings with a greyish buff abdominal margin and a slight paler brown submarginal band.

Head and thorax deep brown, with a black streak on each side.

Abdomen blackish grey, the four first segments having on each side a round yellow patch with a black ring round it.

Expanse, 4.2 inches = 107 millim.

Hab. Honduras.

Phlegethontius lixi sp. nov.

Forewings dull grey, with a round white stigma in the cell. Between the costa and the base of the cell are some almost effaced blackish grey patches, and between the cell and the outer margin the forewings are crossed by three very indistinct wavy blackish-grey transverse bands.

Hindwings dull grey, with two darker and one paler grey band extending from the anal angle almost right across the disc of the wing.

Thorax and *head* dull grey, with two gold yellow tufts on each side at the juncture with the abdomen.

Abdomen, centre and last two abdominal segments pale grey, sides with eleven alternate broad black-and-white bands.

Underside uniform deep brownish grey; hindwings with a narrow black central band; head, thorax, and abdomen marbled grey and white.

Expanse, 4 inches = 102 millim.

Hab. Nicura, British New Guinea (coll. Lix).

SPHINX.

Two new species to describe.

Sphinx fasciatus sp. nov.

Forewings greyish brown, with a large transverse belt of dark brown occupying the central area of the wings. The forewings are also marked and crossed by a number of zigzag paler and darker marks.

Hindwings brownish grey, with three broad but indistinct black marks.

Head and *thorax* deep brownish grey.

Abdomen pinkish brown, with a row of eleven alternate large black-and-white square patches on each side.

Expanse, 4.5 inches = 114.75 millim.

Hab. Lifu, Loyalty Islands.

Sphinx cossoides sp. nov.

(Pl. VII., fig. 22.)

This most aberrant species looks like a *Cossus* or large *Zeuzera*.

Forewings greyish brown, with an oblique, undefined broad band of pale grey lengthways occupying the centre of the wing. There is a dull black stigma in the cell. From the costa near the apex to just inside the angle of the inner margin there extends a zigzag transverse black line, and outside that, from the apex along the outer margin, is a broad greyish black border, which ends in an imperfect grey and black ocellus at the angle of the inner margin.

Hindwings white, with a wide black border.

Head and *thorax* black, with the sides of the thorax whitish grey.

Abdomen dorsal surface black, densely powdered white scales; sides of abdomen white, with a black spot on each side of the first five segments.

Expanse, 2.75 inches = 70 millim.

Hab. Castro Parana, Brazil.

DILOPHONOTA.

The late Mr. H. Edwards, when he was last in England, pointed out to me that there were many too many species of this genus distinguished, and that a great many intermediate forms occurred. This I quite agreed with, but I maintained

that those species which occurred in separate localities were distinct all the same. Now, however, my ideas have been entirely changed by receiving from Aroa, Venezuela, all the named forms, and most of the intermediate forms, so that the entire genus wants revision ; and I find that out of fifteen species enumerated by Mr. Kirby only five can stand as good species, so that the synonymy is as follows :—

1. *Dilophonota ello* (Linn.).
2. *D. picta* (Sepp.).
3. *D. lassauxii* (Boisd.).
aberr. 1. *merianae* (Grote).
4. *D. obscura* (Fabr.).
aberr. 1. *oenotrus* (Stoll).
aberr. 2. *penaeus* (Fabr.).
aberr. 3. *melancholica* (Grote).
aberr. 4. *omphaleae* (Boisd.).
aberr. 5. *rhaebus* (Boisd.).
aberr. 6. *janiphae* (Boisd.).
aberr. 7. *domingonis* Butl.
aberr. 8. *festae* H. Edw.
5. *D. gutturalis* (Walk.).
aberr. 1. *pallida* (Grote).

MANDUCINAE.

MANDUCA.

Here both *M. styx* (Westw.), and *M. medusa* (Butl.) occur in West China, and intermediate forms, so that *M. medusa* (Butl.) must sink into a synonym of *M. styx* (Westw.).

SMERINTHINAE.

METAMIMAS.

In this genus *M. banksiae* (Boisd.) is only a colour aberration of the female of *M. australasiae* (Don.) ; and *M. amboinicus* (Feld.), is not a *Metamimas* at all, but a true *Marumba*.

CLANIS AND BASIANA.

The genera *Clanis* and *Basiana* have been confused and misapplied so often that it is not surprising that Mr. Kirby, with all his multifarious duties and occupations, should, in trying to straighten out the tangle, have fallen into a fresh error.

Mr. Kirby also unites *C. nicobarensis* (Schwarz) to *C. phalaris* (Cram.). This is quite wrong, for it is much nearer to *C. bilineata* (Walk.) ; and the latter, if they are united, would sink as a synonym of *C. nicobarensis* ; but as my male and female from the Nicobar Islands differ somewhat in size, colour, and marking from typical *C. bilineata*, I prefer to regard *C. nicobarensis* as a distinct species for the present. As Mr. Kirby correctly states, *Clanis* was founded by Hübner on *Sphinx phalaris* Cram., but *Basiana deucalion* Walk., on which Walker founded the genus *Basiana*, is evidently of the same genus. Now the African species of *Basiana* are very different, and much nearer to *Pseudosmerinthus* ; so the way to clear up the confusion, to my mind, is to unite all the Indo-Malayan species under the head of *Clanis*, and to put the African species into a new genus, *Pseudoclanis*.

PSEUDOCLANIS gen. nov.

Similar to *Pseudosmerinthus* in shape and size, but intermediate between it and *Clanis* in colour and markings.

The synopses of the two genera will stand thus :—

CLANIS.

Clanis phalaris (Cram.).

C. piepersii (Snell.).

C. bilineata (Walk.).

C. nicobarensis (Schwarz).

C. undulosa Moore.

Clanis gigantea sp. nov.

This species is at once distinguishable from *C. bilineata* (Walk.), and *C. undulosa* Moore, by its very narrow and pointed wings and much larger size.

MALE.—*Forewings* bright pinky brown, instead of clay grey, as in *C. undulosa* and *C. bilineata*; the wings are much narrower and more pointed, but the apex is not produced as in the two allied species. Outer margin cut quite straight and not curved outwards, as in *C. bilineata* and *C. undulosa*. Seven transverse rows of half-moon-shaped dark spots cross the forewings.

Hindwings basal half black, while in the two allied species there is only an oval black patch at the base. Apical half pinkish rust red, crossed by an indistinct line of half-moon spots. Costal and abdominal margins buff.

Head, thorax, and abdomen pale pinkish brown.

FEMALE.—*Forewings* deep chestnut red, pale towards the base, and with a huge patch of pale brownish pink along the costa, enclosing the cell, and occupying the central area of the wings for two-fifths of their width.

Hindwings chestnut red, with a large patch of ruddy brown at the base of the wings.

Head, thorax, and abdomen rosy bay or brown pink.

Underside.—*Male*, pale brownish yellow, with a wide black band reaching from the base of the forewings halfway along the centre of the wings. A large subapical and subcostal blotch pale grey. Across the forewings runs a single blackish grey transverse line, and across the hindwings there are two such lines. *Female*, uniform brownish orange, with the subapical blotch greyish pink. The transverse lines, which show distinctly in the male, are only faintly indicated in darker orange.

Expanse: *male*, 6.5 inches = 165.75 millim.; *female*, 7 inches = 178.5 millim

Hab. Sikkim, and Khasia Hills, Assam.

C. cervina (Walk.).

C. semifervens (Walk.).

Clanis bicolor sp. nov.

Forewings uniform reddish brown, with a darker brown blotch at the apex.

Hindwings deep crimson.

Head, thorax, and abdomen reddish brown.

Underside brownish buff, basal half of forewings crimson. Obliquely from the base of the cell to the apex of the forewings a dark brown line extends.

Hindwings have a patch of crimson at the anal angle.

Expanse, 3.75 inches = 95.6 millim.

Hab. ?

C. exusta (Butl.).

C. orneus (Westw.).

PSEUDOCLANIS.

Pseudoclanis postica (Walk.) (Type of the genus).

P. abyssinica (Luc.).

P. stigmatica (Mab.).

P. basalis (Walk.).

P. adansoniae (Boisd.).

LOPHOSTETHUS.

Lophostethus carteri sp. nov.

This species is very closely allied to *L. dumolinii* (Latr.), but has some very constant differences.

In *L. dumolinii*, the large dark patch surrounding the cell, and occupying nearly one-third of the forewings, is dark blackish brown, only becoming grey on the costa, while in *L. carteri* it is almost the same as the rest of the wings, being only enclosed in a narrow black border.

In *L. dumolinii*, the two pale transverse lines near the base of the forewings are much closer together, and the outer one, which joins the central dark patch, is much more zigzag than in *L. carteri*.

In *L. dumolinii*, the large patch near the centre of the outer margin extends inwards towards the central dark patch, which it almost joins, and across the pale transverse zigzag line which crosses the wings between the two patches; while in *L. carteri* it stops short near the submarginal border, so that the pale transverse line is quite separate from both the dark patches. The large arrow-shaped stigma in the cell in the *L. carteri* has a much shorter central projection than in *L. dumolinii*. The hindwings of *L. dumolinii* are crossed by central transverse bands of ill-defined colour, while in *L. carteri* they are wholly without markings, and of a uniform brownish grey.

On the under surface the differences are much more accentuated. In *L. dumolinii* the under surface is brownish buff, with a distinct pale transverse curved line crossing both wings, and a dark brown patch near the centre of the costa, and a similar one on the hindwings; while in *L. carteri* the costal patch is almost obliterated, the transverse line ends halfway across the forewings, and on the hindwings it is quite straight, while the brown patch is lengthened out into a curved transverse line, which ends at the anal angle. The ground colour of the entire insect is brownish grey, strongly suffused with buff in *L. dumolinii*, while in *L. carteri* it is dark slate grey, suffused with brownish grey, and the yellow admixture is entirely wanting.

Expanse: *female*, 6 inches = 153 millim.; *male*, 5 inches = 127.5 millim.

Hab. Lagos, West Africa.

LANGIA.

L. khasiana Moore is not a good species ; it was founded on a very large and strongly marked female, which had been so damaged by mites that it was not wonderful that Mr. Moore mistook it for a new insect ; so that the species must stand as follows :

Langia zenzeroides Moore.
aberr. *khasiana* Moore.

MARUMBA.

Here I have a lot to alter. Mr. Butler has already remarked that many of the named forms would probably turn out mere local races. I have received large series from China, Japan, and the Khasia Hills, and I find that a great many so-called species are not even subspecies, but only aberrations, and must stand as follows :—

Marumba gaschkewitschii (Brem. & Grey).
aberr. 1. *complacens* (Walk.).
aberr. 2. *roseipennis* (Butl.).
aberr. 3. *echephron* (Boisd.).
Marumba sperchius (Mén.).
aberr. 1. *piceipennis* (Butl.).
Marumba dyras (Walk.).
aberr. 1. *sinensis* (Butl.).
aberr. 2. *ceylanica* (Butl.).
aberr. 3. *fuscescens* (Butl.).
aberr. 4. *silhetensis* (Butl.).
aberr. 5. *oriens* (Butl.).
aberr. 6. *massuriensis* (Butl.).

SMERINTHUS.

S. atlanticus Aust. is a bad species, as all the characters which are said to distinguish it are found in some of my English specimens, and I have carefully compared specimens from Algiers with European. *Eusmerinthus astarte* Streck. is identical with *Smerinthus ophthalmicus* Boisd.

CRESSONIA.

C. robinsonii Butl. and *C. pallens* (Streck.) are not species, but merely subspecies of *C. juglandis* (Abb. & Smith.).

As an Appendix to these Notes, I add here "A Supplementary List of Sphingidae," by Mr. W. F. Kirby, which, together with the new species described by me, brings the Catalogue of the Sphingidae complete down to December 23rd, 1893.



Rothschild, Lionel Walter Rothschild. 1894. "Notes on Sphingidae, with descriptions of new species." *Novitates zoologicae : a journal of zoology in connection with the Tring Museum* 1, 65–98.

<https://doi.org/10.5962/bhl.part.24563>.

View This Item Online: <https://www.biodiversitylibrary.org/item/24179>

DOI: <https://doi.org/10.5962/bhl.part.24563>

Permalink: <https://www.biodiversitylibrary.org/partpdf/24563>

Holding Institution

Natural History Museum Library, London

Sponsored by

Natural History Museum Library, London

Copyright & Reuse

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.